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NATIONAL PROGRAM FOR PHYSICAL FITNESS

REVEALED AND DEVELOPED ON THE BASIS OF 13,000,000 PHYSICAL EXAMINATIONS OF SELECTIVE SERVICE REGISTRANTS

COLONEL LEONARD G. ROWNTREE, MED. RES.
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WASHINGTON, D. C.

Medicine has played an indispensable role in the creation of our armed forces. For nearly four years, doctors have been examining and passing judgment on innumerable thousands of registrants. By January of this year more than 13,000,000 examinations were completed. This unprecedented mass of medical data is now being subjected to statistical analyses. Both in quality (medical procedure and judgment) and in quantity (numbers involved) this material far surpasses that of any other survey ever made in the history of our nation.

While the primary objective of these examinations was for the selection or rejection of men for the military service, there has emerged as a by-product a picture of the health needs of the nation. The knowledge of the medical profession about the physical state and health of the American people has been widened and deepened by the Selective Service experience. Perhaps in no other way could this end have been obtained. The medical profession, in doing this work itself, has itself acquired the knowledge, has revealed the national needs, and now it must come forward with a program to meet these needs. Medicine, in a spirit of service, in a great and effective way, has helped to create our military establishment and has aided fundamentally in solving the whole war manpower mobilization problem and visualized as never before our health needs. Now that medicine has the diagnoses, remedy should be suggested and treatment begun.

In the beginning, the Selective Training and Service Act of 1940 was designed to provide the authority for the leisurely procurement of an army for national defense. This was most fortunate, since it afforded Selective Service an opportunity for orientation in numerous fields prior to the great pressure for manpower that followed the declaration of war. As since amended, the act provides for the wartime control of the allocation of manpower for both military and civilian needs: Procurement, on the one hand, through selection of the maximum number of qualified men needed by all the branches of the fighting forces for the successful prosecution of the war; and, on the other hand, for war production through selective deferment of sufficient numbers of skilled workers in industry and agriculture, to provide all the necessary sinews of war and also sustenance for ourselves and our allies.

The dual function has imposed on Selective Service the need for frequent changes in policy to meet the constantly shifting demands for troops for service and for manpower in the production of food and armament at home and abroad. Regulations have had to be amended from time to time to meet changes in policy.

In the beginning the pool of manpower loomed great, so enormous that it seemed inexhaustible. However, as the various and expanding demands were met, it became apparent that only through the wisest allocation of manpower could the national objective be fulfilled. Major adjustments became imperative in matters relating to marriage, fatherhood, dependency, agriculture and essential occupations. Throughout it all the Selective Service System has striven to maintain an optimum balance in the supplying of all the various needs as defined by national objectives. General Hershey has guided Selective Service with a masterly hand.

THE MEDICAL FUNCTION OF SELECTIVE SERVICE

In five registrations between Oct. 16, 1940 and July 30, 1942 all the males between 18 and 65 years of age have been registered. Twenty-nine million fall between the ages of 18 and 45 but only 22,000,000 men, those between 18 and 37 years of age, are subject to induction. It is the function of Selective Service to classify all men within the 18 to 45 year range, and it is the function of the Medical Division to advise the local boards as to the physical requirements for acceptance into the fighting forces. It is in this connection that medicine has given freely of itself and has done a stupendous and magnificent job. In this program some 33,000 doctors and 10,000 dentists have participated as examining physicians attached to local boards or as members of the medical advisory boards. All such service has been gratuitous. In addition, civilian doctors have constituted the backbone of the examining groups at the armed forces induction stations.

In Selective Service, medicine has functioned at the national, state and community levels. The working unit is the local board, in which is centered the responsibility and authority for classification subject to appeal. Of such there are now 6,441, virtually all with one or more physicians attached. In addition, the medical advisory boards, now some 812 in number, have rendered expert medical judgment through their 8,000 to 10,000 members. The state medical officers, one or more in each state, coordinate the medical work of the local boards within the states and also serve as chief medical liaison officers between national and state headquarters.

The results of all medical examinations have been recorded on special forms provided for the purpose

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(in the beginning form 200, subsequently form 221). Copies of all completed forms, more than 13,000,000. have been filed in the Philadelphia branch of the Division of Research and Statistics of the Selective Service System. Thus it is possible for appropriate authorities to obtain at will the record of any individual registrant provided he is properly identified.

The Changing Nature of Selective Service Examination.—In the beginning the examining physicians of the local boards were called on by the regulations to conduct a complete physical examination of all registrants classified as 1-A. This included the collecting of blood for serologic tests and also urinalysis and, in most instances, blood pressure readings. These physicians were urged to reject registrants or send them forward to the armed forces induction stations only when certain of their ground; otherwise to refer them to the medical advisory boards for more expert examination and judgment.

In the beginning the physical examinations were conducted by the local board examining physicians in their own offices as a rule. As time passed there developed a constantly growing tendency for the physical examination of registrants to be carried on by groups of physicians working in teams or groups at hospitals rather than as individual doctors working in their own offices. While the office examination usually required from forty to fifty minutes per man, it was found that the work could be more effectively handled by groups, reducing the time required for each registrant and simultaneously improving the quality of the examination. To a very great extent certain phases of the medical function of Selective Service were centered in hospitals located in large and medium size cities. Not only were doctors and dentists participating in this development but also considerable numbers of volunteer workers, including nurses, interns, medical students, legionnaires and others. As the result of this assistance, Selective Service was benefited immeasurably and the examination of registrants expedited.

The groups of registrants examined varied greatly in size, according to the number of local boards concerned and the quarters, facilities and personnel available, in some instances involving small numbers of 20 to 30 registrants and 2 to 4 medical examiners, and in others large groups of 100 to 200 men with 10 to 20 physicians. Many of these group examinations were efficiently organized and furnished unusually expert medical judgment. Under such conditions the medical personnel were unusually enthusiastic. However, individual examinations still prevailed throughout the nation with faithful service from thousands of examining physicians. This, in principle, briefly covers the medical function of Selective Service up to the present.

As time went on, it became apparent that some change would be necessary. As the ranks of the Medical Corps of the Army and Navy swelled, the ranks of available physicians for the Selective Service function were rapidly diminishing. In consequence, three possibilities for curtailment of doctors' hours were pilot tested in three different states: Pennsylvania, involving a preinduction examination; Ohio, omitting physicians in the medical examination; and Indiana, involving a preinduction examination, with a coarse screening of manifestly disqualifying defects by the local board examining physician.

This experience furnished the basis for the national adoption of the Indiana plan when the need for change on a national scale became definitely established. The fixed authority of the Surgeons General of the Army and Navy for final selection, and the diminishing ranks of available physicians for local board service were the two most important determining factors back of the change. The present system, of which the collecting of blood for serologic examinations is also taken over by the induction stations, is born largely of necessity—the relative unavailability of physicians, chiefly in rural districts, and the pressing need of the civilian population for medical care. All changes have been effected with prior understanding of the Army and the Navy.

SOME OF THE MAJOR MEDICAL PROBLEMS ENCOUNTERED

Psychiatry.—Difficulties in this field were early anticipated for reasons that are obvious. In fact, Dr. Winfred Overholser, the medical director of St. Elizabeth's Hospital, Washington, D. C., wrote the President in August 1940 suggesting the need for special provisions in this field. As a consequence an Advisory Committee on Psychiatry was created and an adviser to the Director on Psychiatry appointed. A national program of seminars was conducted for indoctrination purposes, and Medical Circular No. 1 on psychiatry was published for the guidance of psychiatric examiners.

Despite these efforts it soon became apparent that selection was faulty: that men were inducted who should have been rejected, thus resulting in high rates of discharge in the neuropsychiatric field. It was suspected that many were being rejected who might have been able to serve to advantage. As a result many other measures had to be adopted by Selective Service and by the military authorities to cope with the problem. Among them was the nationwide Medical Survey Program now in operation. This will be discussed in some detail later.

Dentistry.—The rate of rejections for dental defects has been very high and was on the increase rather than on the decrease. Because of this high rate of rejections a Dental Advisory Board was established at National Headquarters under the leadership of Dr. C. Willard Camalier, and Commander (now Captain) C. Raymond Wells, D.C., U.S.N.R., and president of the American Dental Association, the latter becoming chief dental officer of the Medical Division. This group outlined the needs of the examination and provided both personnel and facilities for the local boards throughout the nation and issued Medical Circular No. 2 (dental). As the result of their efforts, some eight to ten thousand examining dentists were added to the uncompensated personnel of the Selective Service System.

The rejection rate, however, continued high, so high that it became necessary eventually for the armed forces virtually to abolish dental standards, to accept men with dental defects and to rehabilitate them within the military services. The work of the dentists was very satisfactory, and their cooperation was splendid.

Syphilis.—Through the wisdom and cooperation of Dr. Thomas Parran, Surgeon General, the United States Public Health Service has made serologic tests on all registrants to date. It has served a most useful purpose, primarily in identifying those men afflicted with syphilis and revealing the magnitude of the problem of venereal disease to the nation. Statistical analyses disclosed that, of the first 2,000,000 registrants, positive or doubtful serologic reactions were encountered in 47 men out of every thousand examined. Because of the

numerical importance of venereal disease and the failure on the part of society to rehabilitate the syphilitic, their induction became imperative. The syphilitic have been taken into the service as rapidly as facilities for their treatment would permit.

Illiteracy.—Distasteful as it is, it must be admitted that illiteracy exists widely throughout the nation. Of the first million rejectees, 100,000 were disqualified because of illiteracy. The number of rejectees continued to mount until the military authorities were compelled to induct the illiterate and educate them in the service.

Hernias.—The military authorities are adverse to the induction of men with hernia except the small symptomless variety at the umbilicus. Early in the war period, hernia was accepted by the Navy and subjected to repair. Part of the difficulty in the repair of hernia, under compulsion, is the psychic trauma which results in painful scars and functional disability. Only after the hernia "pool" reached more than 200,000 were they found acceptable. At present all registrants with inguinal hernias are subject to induction except those descending into the scrotum. Within the Army the hernia victims are either operated on or carried under limited service. Hernias are included in the daily limited service induction quotas.

The President's Plan for Rehabilitation of Registrants.—Because of the unfitness for service of 50 per cent of the registrants examined and the urgent need of manpower for the armed forces, the President in October 1941 suggested a plan for the rehabilitation of as many registrants as possible. His plan provided that 200,000 at least be rehabilitated, under the auspices of Selective Service and its nationwide network of boards, that the rehabilitation be carried out in the registrant's home community by Selective Service in conjunction with the local county medical and dental societies and that this be effected at a reasonable cost for which adequate funds would be forthcoming.

Obviously this problem was extremely complex. It called for good judgment as well as adequate remedial measures and for cooperation on the part of all those interested in the healing art. In consequence, a meeting was called by Selective Service at National Headquarters, bringing together representatives of the schools and hospitals, of the American Medical and Dental Associations, of the Defense Health and Welfare Services to the War Manpower Commission, of the Council of National Defense and of certain federal and social agencies. The problems of rehabilitation were thoroughly discussed and, to some extent, the interest and the role of each and all of these organizations defined.

Army experience teaches that only certain types of cases are susceptible of satisfactory rehabilitation. In consequence, it was decided to limit rehabilitation to these types. In conference with the Surgeon General, it was further determined to limit rehabilitation to registrants who could be certified by the Army in advance as acceptable on completion of the rehabilitation specified. This plan obviously eliminated all waste effort and expense and limited rehabilitation to those who could subsequently be accepted into the military forces.

Shortly after the rehabilitation program was suggested the Japs made their attack on Pearl Harbor. As a result, the pressure for fighting men became extreme, and most of the registrants scheduled for rehabilitation were inducted in status quo and without the correction of their defects. The plan was pilot tested later in Maryland and Virginia. The results were relatively meager. General Hershey decided therefore not to continue the plan but turned the whole problem over to the War Manpower Commission, which had been created in the interim.

PREHABILITATION

The President's plan provided for the rehabilitation of 200,000 men for service with the armed forces. It did not, however, solve the much greater problem of the lack of physical fitness and the prevalence of deficiencies and defects among other men of military age or among the civilian population as a whole. In this connection Selective Service offered its own plan, the plan of prehabilitation, which provided for a campaign of education concerning the standard requirements in the Army, the examination by the family doctor or dentist of those men who fall short of these requirements, the correction of remediable defects found by the doctor or dentist concerned on the usual doctor-patient relationship and the certification of prehabilitation by the doctor responsible for the correction of the defects.

This plan invited every registrant and every young man in the nation to fit himself in advance for examination and, if acceptable, for service with troops or industry. It emphasized the desirability of not permitting minor defects to defeat major objectives. It is particularly applicable in universities, colleges and schools all over the country, as also in labor and industry. The fact that defects are prevalent, as evidenced by the surveys of Selective Service, indicates a widespread need for improvement in physical fitness and health. This campaign accomplished much, particularly in making the nation conscious of national health needs and in laying the foundation for programs for physical restoration and physical training and for programs of prevention.

WARTIME SELECTION

Originally, Selective Service was concerned in the procurement of men for a peacetime army of moderate proportion and of slow growth and expansion. With Pearl Harbor and the declaration of war, came:

(1) the need for immediate and unprecedented expansion with a pronounced increase in the rate of induction;

(2) the immediate lowering of the physical requirements for induction, in some instances temporary in nature;

(3) the use of 1-B men (limited service) by the Army;

(4) a change in the character of examination for induction both by Selective Service boards and by the Army;

(5) abolishment of enlistment by the Navy, and Selective Service procurement for the Navy;

(6) the correction of certain physical defects within the military establishment, and

(7) the extension in the age range of those acceptable for military service, 18 to 38, as contrasted with 20 to 28 in the pre-Pearl Harbor period.

The advent of war resulted in a movement to increase the tempo of Selective Service and to enlarge the registered manpower pool to its maximum strength as rapidly as possible. The fourth registration, on April 27, 1942, required men between the ages of 45 and 65 to

register, and on June 30 of the same year persons between the ages of 18 to 20 were requested to register. In December 1942 inductions were limited to men of 18 to 37 years inclusive.

In August 1942 classification 1-A (r) (remedial) and 1-B (limited service) were eliminated, leaving IV-F as the only classification for registrants disqualified for general military service.

Dual v. Single System of Examination.—From a medical point of view the most important change concerned the type of medical examination given registrants by the local board examining physicians. With the final responsibility resting in the Office of the Surgeon General for a complete physical examination and the decided expansion of medical personnel in the Medical Corps of the Army and Navy, and because of increasing difficulty in obtaining adequate numbers of local board examining physicians, the Selective Service local board medical examination was abolished. In its place was substituted a preliminary physical examination, a screening test, whereby only those registrants with manifestly disqualifying defects were rejected. These defects were listed on D. S. S. form 220.

The fundamental change in procedure elicited varying reactions: satisfaction in areas where medical service was difficult to obtain; dissatisfaction and to some extent resentment, where medical services were still available. However, in the course of the next six months the new system was found generally acceptable. Notwithstanding the changed procedure, group team examinations still continued in larger centers. In Chicago and New York it culminated in mass examinations involving, in some instances, as many as 1,000 to 1,200 registrants per day.

As a result of the changed procedure and the increasing inductions, the relative rejection figures from local boards and induction stations underwent reversal. Under the final type of examination given on local boards, it was found that Selective Service was responsible for 41 of the 50 per cent rejections. But, under the screening examination, with the final examination given by the armed forces, Selective Service is responsible now for rejections of only 5.6 per cent of the 46.9 rejection rate during December 1943.

Throughout the first three years of existence, Selective Service continued to collect blood for serologic tests for syphilis. Selective Service discontinued this practice in the early months of 1944 and the collection of blood, as well as serologic tests, is now made at the induction stations.

Beginning in January 1943 Selective Service procured men for the Navy as well as for the Army. Enlistment, except under 18 and above 38 years of age, was prohibited.

Lowering the Standards as the Result of Need for Military Manpower.—The standards for admission to the fighting forces are established by the War Department (more recently after conference with the Navy) and adjusted from time to time to create the maximum possible available manpower pool. The level of the requirements depends on the number of men needed in the military services, the urgency of need, the size of the overall manpower pool and the relative need for men for military service and for production. Selective Service attempts at all times, through proper adjustment, to maintain the optimal balance in meeting manpower needs for national objectives.

Special Provisions for Selection in the Neuropsychiatric Field.—The most difficult problem of selection is in the field of neuropsychiatry. Many plans have been tried and an infinite number of possibilities suggested. The most important steps taken by Selective Service and the armed forces are as follows:

1. Provision in D. S. S. form 40 for the registrant's own statements relative to present or past mental difficulty.

2. A course of indoctrination, which was given in the early days of Selective Service through an educational campaign of seminars, and Medical Circular No. 1.

3. The local board judgment based on knowledge or information acquired locally or through the local board examining physicians.

4. The local board preliminary physical examination conducted by the local board physicians.

5. Provision for information to the local board by affidavits from physicians or statements of governmental agencies.

6. The Selective Service program covering the assembling of pertinent information, as set forth in section 623.33 (e) of the regulations.

7. Examination at the armed forces induction station.

8. Observation period of three days at the discretion of the armed forces examining board. This period may be too brief in some instances. Perhaps it could be extended to advantage—a view stated a year or so ago by Dr. R. D. Gillespie on his visit here from England.

9. After rejection by the armed forces, a special review of findings by a medical advisory board if considered indicated and requested by the local board.

Medical Survey Program.—Despite all the various devices, rejection rates and discharge rates for nervous and mental diseases have still continued unduly high. The problem loomed very serious. In February 1943 a letter was received by the director of Selective Service, Major General Lewis B. Hershey, from the Secretary of War, Henry L. Stimson, outlining the difficulties and calling on Selective Service for a special program whereby information concerning registrants, pertinent to selection or rejection, should be assembled locally and transmitted to the psychiatrists on the induction boards for their guidance in arriving at decisions.

As a result, a national program has been developed. It involves the appointment of special advisers to each state director and the appointment of several thousand medical field agents, one or more to each local board, for the assembling of information, much of which is obtained from existing social and welfare agencies, the files of penal institutions and the like. Information is also obtained from school teachers or school records. Forty-six states now have some such program in operation; 8,000 medical field agents have been appointed. The program has the backing and support of the War Department, the Surgeons General of the Army, of the Navy and of the U. S. Public Health Service, and the U. S. Commissioner of Education. The program is well under way under the efficient coordination of Lieut. Col. Louis H. Renfrow and Dr. R. W. Waggoner.

The Present Size and Composition of the 4-F Pool.—It seems desirable at this juncture to consider the size and composition of the 4-F pool as it exists at present. This furnishes a much needed perspective. The 4-F pool has grown steadily during the past year

at a net rate of approximately 85,000 per month. This has continued despite the drastic lowering of standards, which has included among other changes the induction of limited numbers of men with uncomplicated venereal disease, with hernia and illiterates, and large numbers of men with dental defects. The size and composition of the 4-F pool at present is shown in the accompanying table. The age distribution in this group is of special interest; as of March 1, 1944 there were 1,400,000 under 26 years of age, approximately 700,000 between the ages of 26 and 30 years, and 1,400,000 between 30 and 38 years of age. Above 38 years of age, experience has shown that there are few that can qualify and serve satisfactorily. Above 38 years the rejection rate is over 60 per cent and the discharge rate unusually high.

Preponderance of Psychiatric Rejections.—Attention is called to figures presented on rejections: for mental disease 657,100, or 16.2 per cent; for mental deficiency (including illiteracy) 563,300, or 13.9 per cent; for neurologic disorders 208,600, or 5.1 per cent, totaling in these categories 1,429,000, or about 35 per cent of the grand total of the rejected.

The picture as a whole shows that of some 13,000,000 examinations given there are still approximately 4,000,000 rejectees, despite the lowering of standards and all the rehabilitation that has been carried on throughout the nation. In addition, the discharge rate continues high. More than a third of the rejections are for neuropsychiatric reasons.

The question arises as to whether psychosomatic disease should be included in this category. They are closely related in many instances at least. They represent the visceral expression of disease, functional or organic in nature, rather than nervous and mental diseases per se. Selective Service figures revealed an unusually high incidence of psychosomatic diseases in peacetime selection, especially in the white. The incidence of neurocirculatory asthenia was 6.7 times as great in the white as for the Negro, and for peptic ulcer ten times greater. The effect of war has greatly increased the incidence of psychosomatic diseases in the Negro, who in peacetime appeared relatively immune. As a result, it can be stated that the psychosomatic disorders are appearing in increasing frequency in the Negro as well as in the white population.

Lack of Physical Fitness and Need for Physical Training.—Not only do the defects, deficiencies, disabilities, disorders and diseases abound, but, in addition, many of the registrants were found to be pampered, soft, flabby and in need of conditioning. Special training in physical fitness was necessary, after induction, which represented weeks of wasted time and effort which could have been avoided if every young man prior to induction had made himself physically fit.

Lack of physical fitness prevailed among the youth of the country because the nation failed to recognize its importance and because youth itself failed to earn fitness. Where does the fault lie? The present situation is the result of indifference and apathy on the part of the government, states, municipalities, parents, teachers, churches, the medical and dental professions, the U. S. Public Health Service and, to a certain extent, of youth itself. It is in a large measure failure in our education system and our homes. The failure is a combined one; youth is the victim. Only concerted efforts of all those concerned in the failure can bring about the cure or, what is still more important, prevention for the future.

Physical fitness is a matter of development. The attributes essential to success in war and combat are strength, endurance, stamina, special agilities, leadership, initiative, emotional stability and the indomitable "will to win." Physical fitness is the bodily state which combines maximum power and efficiency, with the minimum time for recovery after exhaustion. It cannot be acquired overnight. It is a matter of evolution. It calls for time and for graded training in the development of the body and mind to maximum efficiency.

Estimated Principal Causes for Rejection of Registrants 18-37 Years of Age in Class IV-F, as of May 1, 1944

(Preliminary)

Principal Cause for Rejection	Number	Per Cent
Total	4,049,000	100.0
Manifestly disqualifying defects	425,700	10.5
Mental disease	657,100	16.2
Mental deficiency *	563,300	13.9
Physical defects	2,345,200	58.0
Musculoskeletal	303,500	7.5
Syphilis	286,800	7.1
Cardiovascular	261,600	6.5
Hernia	229,000	5.7
Neurologic	208,600	5.1
Eyes	206,100	5.1
Ears	156,100	3.9
Tuberculosis	107,700	2.7
Lungs	69,600	1.7
Underweight and overweight	60,700	1.5
Feet	51,700	1.3
Abdominal viscera	50,600	1.2
Kidney and urinary	41,900	1.0
Varicose veins	40,700	1.0
Genitalia	40,400	1.0
Endocrine	38,800	1.0
Teeth	35,800	0.9
Skin	24,900	0.6
Neoplasms	24,900	0.6
Nose	24,300	0.6
Gonorrhea and other venereal diseases	18,200	0.4
Hemorrhoids	16,500	0.4
Mouth and gums	11,000	0.3
Infectious and parasitic	4,200	0.1
Throat	4,000	0.1
Blood and blood forming	3,800	0.1
Other medical defects	23,800	0.6
Nonmedical defects	57,700	1.4

* Includes registrants rejected for educational deficiency before June 1, 1943 and for failure to meet minimum intelligence standards after that date, as well as those rejected for mental deficiency.
Source: Forms 110, 111, 140A and 221.

The President Creates a National Committee on Physical Fitness.—So important loomed the problem that in 1943 the President created a national committee on physical fitness under the egis of the Federal Security Agency and the chairmanship of Mr. John B. Kelly. This committee has worked assiduously in the field and from its national headquarters in Washington to educate the public concerning the present situation and to indoctrinate the people with a consciousness of the national need for conditioning. The committee has published many brochures and has aided many groups here and there in every state in the Union to set up the machinery whereby physical fitness may be attained. In the brief space of a year it has interested many national leaders and has harnessed together the interests and efforts of more than 150 national organizations that come in contact intimately in one way or another with the problems of fitness.

However, the committee has found that a great national movement for greater physical fitness awaits vigorous medical leadership. Hence this committee is bringing its problem to the American Medical Association and requesting the medical leadership essential to success.

CONSTRUCTIVE PROGRAM FOR PHYSICAL FITNESS

A Challenge to Medical and Social Leadership.—The amazing conditions revealed by the Selective Service statistics, as to the physical fitness of the nation, is a challenge to the medical profession particularly and to all interested in national health and national morale, and in the future of the nation and its youth. The conditions call for both a remediable and a preventive program. Everything should be done that can be done to improve the surprising conditions that have been revealed, and more must be done to prevent similar conditions developing in the rising generations.

The Need for the Leadership of the Organized Medical Profession.—This is a problem that not only requires the sponsorship and devoted efforts of individual medical men but calls for more: the organized sponsorship and support of the profession of medicine. The need for such sponsorship, leadership and support is recognized by the present National Committee on Physical Fitness of the Federal Security Agency, and it looks to the organized profession of medicine not merely for help but for active participation and assistance in the direction of the movement for physical fitness, for "better living through more vigorous health." Especially in the fields of physical restoration and preventive medicine, the social obligations of the medical profession are clear and the opportunity for national service is patent.

A Joint Physical Fitness Committee.—The immediate need is the formation of a functional joint committee of the American Medical Association and the National Council on Physical Fitness with strong and equal representation of the two organizations. This will furnish a broad based competent, professional leadership for a movement that will be immediately largely remedial in character but which from the beginning will be preventive in character and more so as the program evolves. The program should immediately seek Presidential and Congressional support to help in the improvement of physical fitness of the civilian population, to make it a part of the American consciousness and even of the American conscience by declaring the twelve months beginning with September 1944 a year of emphasis on physical fitness.

PHYSICAL FITNESS YEAR

The Proposal.—The National Committee on Physical Fitness specifically requested the cooperation of the American Medical Association (1) through a committee of five to act jointly with a similar group from the National Committee in the development and operation of a physical fitness special emphasis year; (2) the designation of a year beginning Sept. 1, 1944 as the "Physical Fitness Year" during which the Physical Fitness Program will be put into effect on a nationwide basis; (3) in the announcement by high authority (President or Congress) of the "Physical Fitness Year"; (4) to develop future planning during the Physical Fitness Year, which might include the consideration of a suitable organization to handle the problem in perpetuity and to forestall for the future a recurrence of the situation such as herein revealed; such a permanent organization might well be one analogous to the National Research Council to function in the future in the realm of health and physical fitness as the National Academy of Science has functioned in science since created by Lincoln as a war measure in 1863, and (5) a National Physical Fitness Foundation might well merit and receive liberal private and public support.

A Broadly Based Continuing Program.—This would only initiate a program that will go on for years. It must become a part of our school programs at every level—elementary, secondary, advanced and adult. It must become a part of the personal hygiene and regimen of each individual as expressed in habit. It must find continuing expression in school journals, medical journals and journals of general circulation. There must go on comprehensive programs of research under the direction of the Joint Committee on Physical Fitness as well as stimulation of research in the university graduate schools and institutes of research, in insurance companies and in industrial personnel departments. The coordination of this research which is essential for the long time program will be done by the Joint Committee or by a special agency created by it, the Foundation of Physical Fitness.

I have only sketched and suggested the obvious need and the great opportunity which is before us for making the nation biologically fit for whatever is its mission in the postwar world. It is essential for our development as a nation. By making us more fit it will make us more dynamic. It will make us ready for the great opportunities ahead of us. In such a program in the interest of the whole nation for generations to come the medical profession will join with parents, educators, social workers, public health leaders and others. The special knowledge of the medical profession, its accepted leadership in the field, its social vision and its strategic social position will be an essential in a continuing long time program for a stronger, a greater America.

ABSTRACT OF DISCUSSION

Dr. Raymond W. Waggoner, Ann Arbor, Mich.: The medical survey program, which was announced last October and has been functioning since that time, consists primarily in getting information to the induction station through the use of certain forms. Form 210 is a form used to designate the individual, provided he has been in some mental hospital or has received treatment for mental disease by his physician. This is cleared through agencies and hospitals and through the social exchanges. Form 212 is a medical-social history form and has to do with the social and medical adjustment of the individual up to the time he reaches the induction station, and that is filled out by a specially designated agent called the medical field agent. One or more of these individuals, who should have social service training, is attached to each local board. There are more than 9,000 of them in the country at the present time. Forms 213 and 214 contain information obtained from the schools, and these are filled out by teachers in the school system. This information is in compact form and can be used by the psychiatrist at the induction station in a short time. It makes possible the rejection of men who might otherwise be accepted and who might fail in the military service, and it also makes possible the induction of some men who might otherwise be rejected at the induction station and who might be capable of serving. Thus it makes for a more efficient screening program from the

psychiatric standpoint. More physicians must be made aware of this problem. More general practitioners and more non-psychiatric specialists must become grounded in the basic psychiatric precepts and simple treatment procedures so that minor neuropsychiatric problems can be handled by them without referral to a neuropsychiatrist. This I think can be brought about first by a better understanding by the medical profession of the immensity of the problem and secondly by establishing a better basic training method. It seems to me that the medical schools should and must establish a better psychiatric training program. Teaching hospitals must do more than they are doing at the present time in training interns and residents in psychiatric precepts while they are being trained for service in other specialties.

MAJOR GEN. GEORGE LULL: During the past few years I have discussed privately with Colonel Rowntree some of these problems. It was hard for us to realize the exact state of the youth of the nation as revealed by statistics from the draft notwithstanding the fact that we had statistics from the draft in World War I, which were bad enough. These figures have been improved in certain aspects and are relatively worse in others, especially in the emotional group of diseases. It was planned to have some of these defects corrected by the profession at large without any organized effort. This was a failure. When we started out we wanted a physically fit army, an army made up of young men who had practically no defects. We gradually lowered our standards. We had to if we were to get an army. We had to take cases of venereal disease and treat them. We had to take the hernias and operate. We had to take the dental defects and correct them, and the amount of dental decay and other dental defects was appalling. The Dental Corps gives some interesting statistics: I think the best one that I have heard is to the effect that if all the soldiers who had partial or complete dentures made were put together they would comprise fifteen infantry divisions. This does not include, of course, the ordinary men who had fillings or extractions. That has been a big problem for the Dental Corps and in many of our camps they have worked three shifts of eight hours each. It is all right for the Dental Corps to work three shifts of eight hours each, but it has encountered serious difficulties as to what man would come around at 3 o'clock in the morning to have a tooth pulled after he had drilled all day the day before. So that there have been certain administrative difficulties. At one post in the Army I know that at the present time they are doing ten herniotomies a day. At this station a number of small units pass through for certain phases of their training, so that their pool is being replenished all the time by men with hernias and with certain other defects. Colonel Rowntree has told you about the large group of individuals who have remedial defects and whose defects are to be corrected. There is another group which is probably more serious than this, and this group is made up of those who have defects which could have been prevented earlier in life. It is too late now to do anything about this group, but I believe that we, as representatives of organized medicine, will have to take a stand and render medical guidance to any plan that is put into effect in this country to improve physical fitness. Every man in the medical profession will have to assist in this physical fitness program. The physical fitness of our youth is not improving on the whole. It is probably worse than it was in the last war. There are many factors other than the medical ones which have a bearing on this physical fitness, but something has to be done about it and I think that we are approaching it in the proper manner at the present time. It means that every man must do his part.

DR. R. L. SENSENICH, South Bend, Ind.: Within recent times there have been an increasing number of proposals from labor unions to the Council on Industrial Health of the American Medical Association expressing a desire not only for preemployment examinations but also some periodic health examinations and educational work in health matters. Now a new problem has arisen by reason of the fact that there will be so many men returning from the military services who must have thoroughgoing physical examinations and placement on a basis of their ability to do a particular job if they are to be given their old positions in industry and are given any priority in that respect. This problem also has come to the Board of Trustees, and while we were familiar with this activity in a national way it seemed to lack as yet real form, definition or any real proposal as to the mechanism to be followed. The definition of physical fitness as it has been presented to the Board is that fitness, first, will result in a minimum of disability due to sickness of any type; second, will result in ability to recover rapidly from fatigue and exhaustion. Industry is interested in that. A fitness that will insure the ability to perform any task, whether military or civilian, efficiently within the limits of the human body. Physical fitness based on an ideal which will demand a common effort on the part of the individual to maintain vigor and health, and along with that will have some stimulation to appearance and those things which should be, especially to growing youngsters, of some pride in endurance and ability to do the thing which we stimulate in athletics in the schools today. Fitness based on sound home, school and community training. This definition includes the factor which we have all come to realize has been more or less missing; that is, some education in self discipline. The Trustees, after giving thought to this whole matter, appointed a committee of five to participate with a committee of equal number from a group of the National Council on Physical Fitness. As I understand it, these two groups are to be advisers to the activity. The Council itself comprises a much larger number of many agencies in order to give it breadth of interest and means of activity, but these two groups are presumed to advise and are given assurance that their advice will be given consideration, which is of some importance in so large a group. The committee appointed by the American Medical Association is composed of General Lull, Dr. L. A. Buie, Dr. Morris Fishbein, Dr. W. B. Stroud and myself. This is a big program. It is going to take a long time after its public announcement to accomplish its purposes.

DR. WALTER FREEMAN, Washington, D. C.: The importance of physical fitness as stressed by Colonel Rowntree is well founded. It has to be built up after the war. We are soft. At least we have been. I hope we are getting a little tougher now. The program that is to be set up is undoubtedly manifold, but essentially it is based on the combination of facilities, time and leadership. Facilities for this recreational—toughening—program have to be supplied by the communities. The time necessary for this restitution of the physical and mental stability has to be forthcoming, and probably the employers will find it to their advantage to grant some time during the working period for this program of activity. The utilization of time and the utilization of facilities will depend on leadership.

DR. HERBERT F. ROBB, Belleville, Mich.: The recognition of our physical defects is one thing and the cure of these defects is another. One is simple and the other is complex. The cure of those problems and their prevention take into consideration not only heredity but the environment—and the rapidly changing environment—and variable reactions of the individuals to those environments. The American nation has gone through one of the most rapid revolutions of any environment of any nation in the history of man; that is, the revolution from an agricultural frontier civilization over to an industrial, urbanized civilization. The strain of urbanization is intense. In making Selective Service examinations in the southwest corner of Wayne County, Mich., I have had people from every foreign nation and every section of the United States. Those who were mentally and physically unfit were largely the product of broken homes which were in conflict with civilization and the teachings of organized religious and political groups. If we will consider the psychosomatic problem of the individual we will arrive at a better solution of our problem.

PHYSICAL FITNESS PROGRAM

A REPORT OF MEDICAL AND DENTAL EXAMINATIONS OF 5,620 SENIOR AND JUNIOR HIGH SCHOOL STUDENTS

CARL A. WILZBACH, M.D.
Commissioner of Health
CINCINNATI

Even in matters as vital as health it would seem that it takes a war to do a job that could have been done well years ago. It has always been difficult to have acceptable school health examinations made and harder still to have the defects found corrected. The task of getting these defects corrected is usually left to the school physicians and nurses. In time of war, however, with every one wanting to do "his bit," latent ability and help can be called on both to make the examinations and to assist with the efforts of having corrections made.

When the United States Office of Education proposed the High School Victory Corps Physical Fitness Program in January 1943, Cincinnati joined with other cities in the nation and put into effect this war emergency program. It was pointed out at that time that there were 28,000 high schools and 6½ million high school students. It was further stated that there was a war to be won and that the high school students are a potential source of trained manpower and that they should prepare youth for war service and for active participation in industrial, agricultural and other war efforts. Preinduction courses given the boys and girls included guidance in war service, community services related to the war and finally a course in physical fitness.

Before entry on the physical fitness program a health examination was required. The task of examining more than 5,000 students required considerable organization. The school medical services in Cincinnati are a function of the health department. Conferences for discussing organization and plans were held. These included the superintendents of schools, the commissioner of health, the director of school hygiene, the director of physical education and the director of dental hygiene. The examinations were made much as they are in large induction centers for selectees and were done in each school. The examination forms used were similar to those prepared for Army officers. Eighteen physicians and forty-three public health nurses and supervisors employed by the health department were responsible for the physical examinations. Dental examinations were made by dental hygienists. The extra assistance made possible because of the war stimulus was given by Red Cross volunteers, nurse's aides, parent-teacher representatives, school principals, physical education teachers, classroom teachers and the women's auxiliary of the county medical society.

Previous to the health examinations, auditorium lectures were given explaining the reason for the examinations and the necessity for hearing tests, blood tests, x-ray examinations of the chest and other parts of the examination. The need for having defects promptly cared for was also stressed. In addition, a special preinduction course on health education, running through the entire school year, was inaugurated.

The organization for the correction of defects was augmented by the school personnel. A student needing medical or dental attention was first approached by the school nurse and then, if necessary, in succession by the classroom teacher, the physical education teacher and the principal. Each of these were provided with a list of the students requiring attention. Needless to say, it was these added obligations taken on willingly because of the war emergency by the school teaching force that helped to make the efforts successful.

While the number of certain defects found was small, it must be remembered that those examined were junior and senior high school pupils. Besides having had the care of private physicians, most of them had been examined in preschool round-ups and in schools in the first, third, fifth and ninth grades, and after that some of these students were examined a number of times to qualify for athletic competition. Almost all of the gross organic defects were already known to the school doctors, nurses and school authorities. Efforts had been made throughout the school life of the student to encourage him to secure the needed corrections. It is recognized that some defects could not be overcome, and they are included in the total figures. Records were kept on corrections until May 31, 1944. Since that time additions could be made to the corrections, and many other pupils preferred to wait until the summer vacation for their medical and dental attention.

Five thousand, six hundred and twenty white and Negro senior and junior high school boys and girls were examined. In this number 2,293 physical defects were found. Some students had more than one defect.

Four thousand, six hundred and ninety-eight students, 83.55 per cent of all examined, had one or more dental defects.

VISION

Reviewing the more important organic defects most affecting the future health of the student, it was found that 342, or 6.1 per cent, had impairment of vision. Some of these students had been fitted with glasses that at the time of examination did not correct their faulty vision; some had been to the ophthalmologist and had failed to return for recheck; some had glasses but were not wearing them. By June 1, 1944, 235 students had had their eyes corrected by physicians and 42 were under their physicians' care. Corrections amounted to 80 per cent.

HEARING

Individual hearing tests were made on 5,623 students, using the Maico type D-18 audiometer. Of this number 217 were retested. A total of 116, or 2.1 per cent, had some hearing loss, and these were referred to their physicians. A special referral form was sent to the otolaryngologist suggesting that lip reading classes were available should he wish to recommend them. A large group of volunteer Red Cross nurse's aides, under the direction of registered nurses, made the hearing tests. Qualified otolaryngologists had cared for 69 of these 116 students at the completion of this report.

NOSE AND THROAT

Closely related to the hearing problems and with the possibility of causing serious organic disease were found 137 boys and girls with enlarged and diseased tonsils.

Read before the Section on Preventive and Industrial Medicine and Public Health at the Ninety-Fourth Annual Session of the American Medical Association, Chicago, June 16, 1944.

Miss Florence Schrieber, R. N., supervisor of school nursing, organized and guided the entire program and made this report possible. She was ably assisted by health department physicians, nurses, technicians, laboratory specialists and particularly Dr. Bernard Schwartz, Dr. David Heusinkveld and a host of volunteers.

These defects made up 2.44 per cent of the total defects found. Here again the follow-up efforts to have tonsillectomies done are difficult, but a month before the school year ended 44 students had their tonsils out and 30 more had appointments with their physicians for operations.

TEETH

Of the 5,623 students examined dental caries was present one or more times in 4,698, or 83.3 per cent. These findings are similar to other surveys made, such as the National Youth Administration and the Selective Service examinations. It would seem advisable for the school dentists to come to some agreement with the dentists in private practice as to what is a cavity. In the efforts to have defects corrected the busy dentist in private practice did not always take kindly to the school dentists' referrals.

The importance of sound teeth has been emphasized in school dental programs. A check of the yearly school dental records in Cincinnati shows gratifying improvement. While the number of instances of caries found seems high, Dr. Horace Jones and his assistants reported most of the mouths examined in good condition.

HEART

There is no more important function of the school health service than to find abnormal and damaged hearts and to guard against further injury to the individual either in school activities or in after life.

In the initial examinations the school physicians screened out 242 students with some abnormal heart condition. Following the x-ray examination of the chest 61 were added, making a total of 303, or 5.3 per cent, of the total pupils examined.

Dr. Bernard Schwartz, cardiologist and director of the Max Stern Heart Station, with the help of an enthusiastic group of volunteers from the Woman's Auxiliary to the Cincinnati Academy of Medicine (which is the Hamilton County Medical Society), assisted by public health nurses, reexamined all of these suspected heart cases. Electrocardiograms, sedimentation rates, blood counts, basal metabolism tests and additional x-ray examinations were made.

On reexamination of the 303 with abnormal hearts, 209 were found to have no organic heart disease but included functional and accidental murmurs and neurocirculatory asthenia.

The remaining 94 had definite organic heart disease and of these 29, or 31 per cent, had rheumatic heart disease. There was an additional 16 per cent with possible rheumatic hearts. These gave a history of previous illness, and the examinations revealed suggestive signs and symptoms, all indications that they had rheumatic fever. Rheumatic heart disease then accounted for possibly 48 per cent of the total number of hearts with organic defects.

The examinations revealed 4 students with definite rheumatic heart disease with histories of previous attacks who at the time of their examinations had mild fever and should have been in bed.

In an effort to make the general practitioners conscious of rheumatic fever, in March of 1942 the Cincinnati Academy of Medicine and the Cincinnati Heart Council requested the board of health to make rheumatic heart disease a reportable disease. This request was promptly complied with.

Rheumatic heart disease is the most common form of heart disease in children and is said to be responsible for more deaths in ages 5 to 14 years than any other serious infectious disease of childhood.[1] It is further said that the toll of disability is far greater than that taken by poliomyelitis, for 60 per cent or more of rheumatic fever patients develop permanent heart disease.

Following the examinations, a letter including the diagnosis was written to the family doctor and signed by the cardiologist. This letter was sealed and carried by the school public health nurse into the home of the student.

TABLE 1.—*Report of Heart Examinations*

Total number with heart abnormalities found in screening examinations			303 or 5.38%
Reexaminations:			
No organic heart disease			177
Functional and accidental murmurs			30
Neurocirculatory asthenia			2
			209 or 3.71%
Organic Heart Disease			
Rheumatic heart disease			29
Possible rheumatic heart disease			16
Congenital heart disease			17
Tachycardia			13
Hypertension			12
Cardiac hypertrophy			4
Cardiac arrhythmia			2
Organic hypertension			1
			94 or 1.67%

Heart Cases

Rheumatic Heart Disease		Possible Rheumatic Heart Disease	
White male	7	White male	6
White female	17	White female	8
Colored male	1	Colored male	1
Colored female	4	Colored female	1
	29 or 30.85%		16 or 17.02%

Congenital acyanotic heart disease	White male	4
Congenital acyanotic heart disease	White female	6
Congenital acyanotic heart disease	Negro male	1
Congenital cyanotic heart disease	White male	1
Congenital cyanotic heart disease	White female	1
Possible congenital heart disease	White male	1
Possible congenital heart disease	White female	1
Hyperthyroid	White female	6
Tachycardia	White male	6
Tachycardia	White female	3
Tachycardia	Negro female	1
Essential hypertension	White male	7
Essential hypertension	White female	4
Cardiac hypertrophy	Negro female	4
Arrhythmia	White female	2
Hypotension	Negro female	1
		49 or 52.13%

Where necessary these students were recommended for special vocational training suitable to the heart condition. Efforts were made to have them take classes with other normal pupils and to have the classes on one floor.

TUBERCULOSIS

It would seem that the high school is not the place to find tuberculosis; at least this seems true in Cincinnati. Three thousand, six hundred and twenty-two students voluntarily took x-ray examinations with 4 by 10 inch films. All questionable films were rechecked with standard 14 by 17 stereo films. One white male and 1 Negro female, or 0.05 per cent, were found to have active tuberculosis. This is all the more astounding when it is remembered that among this group taking x-ray examinations there were 368 Negro boys and girls. The tuberculosis picture is apparently changing,

1. Vital Statistics of the United States, 1940.

for until recently the 16 to 20 year old age level had one of the highest tuberculosis rates. Four suspected cases are being rechecked. From the x-ray findings, 82.5 per cent showed primary phase tuberculosis: 70.1 grade 1, 10.2 grade 2 and 2.26 grade 3. Of the 3,622 x-rayed, 626, or 17.28 per cent, had negative x-ray findings.

The x-ray diagnoses were made by Dr. David Heusinkveld at the health center of the Cincinnati Health Department.

SEROLOGIC TESTS

Serologic tests were made on 3,581 students, including 3,180 white and 401 Negro boys and girls. Twelve positive serologic reactions, or 0.33 per cent of the total, were found. Of the positive serologic reactions 9, or 2.2 per cent, were in Negroes and less than a tenth of 1 per cent (0.09 per cent) were in white children. None of the cases were infectious.

In studying the individual histories and reports of examinations, only 1 had a definite diagnosis of congenital syphilis. It was also difficult to obtain a history of exposure or of past signs or symptoms. A diagnosis of early latent syphilis was made of 5 students. One student had had five years of treatment. All but one of these students are under treatment.

PSYCHIATRIC QUESTIONNAIRE

A psychiatric questionnaire, prepared by Dr. Jack Hertzman, acting director of school hygiene, was filled out by 4,213 students and 43 per cent recorded one or more significant symptoms. There were ten questions in all and they were asked in a manner that did not betray the purpose of the questions. The questions were related to the following: allergies, recorded 448 times, choking spells and pounding heart 341 times, stuttering 242 times, nightmares 225 times, dizzy spells and fainting 185 times, kidney trouble (bed wetting) 172 times, asocial tendencies 103 times, excitement over school examinations 92 times, pains and diet 55 times and fits 25 times. These investigations and findings will be reported on in detail later, and no attempt is made to interpret them in this paper.

A report on corrections shows that of the 2,293 physical defects found 801 had been corrected and an additional 491 were under treatment by private physicians. This represents 56.1 per cent of the total. Public clinics had corrected 359 and an additional 200 were undergoing treatment, accounting for 24.3 per cent of the total. Eighty per cent plus had physical corrections or were under treatment by private physicians or public clinics.

Of the 4,698 pupils with dental defects, 2,540 were corrected by private dentists and an additional 535 were still going to the dentist. This represents 65.4 per cent of the total. Public dental clinics had corrected 144, and an additional 18 pupils were still visiting the dentist, accounting for 3.4 per cent of the total. Sixty-nine per cent had dental corrections or were under treatment by private dentists or public clinics.

SUMMARY

1. Five thousand, six hundred and twenty-three high school students were given medical, dental and psychiatric examinations as a part of the Victory Corps Program. Their general physical condition was excellent and a credit to the physical fitness program in the schools. Their good health status was further indicated by a low tuberculosis, venereal disease and organic disease rate.

2. There was found a need for more serious concern for rheumatic fever and heart disease in school children.

3. Army induction doctors report these young men in good condition when they appear for examination, some with hernias repaired, others with minor surgery and dental needs cared for as a result of the school examinations.

4. There was a high percentage of corrections, due largely to volunteer assistance and additional help from school principals and teachers. These gains must not be lost after the war.

TABLE 2.—*High School Physical Fitness Victory Corps Program Chest X-Ray Reports, Combined Term 1943-1944*

		Primary Phase Grade 1		Primary Phase Grade 2		Primary Phase Grade 3		Negative		Suggestive		Active	
	Total	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent	Number	Per Cent
White male	1,579	1,108	70.17	116	7.35	19	0.13	332	21.02	3	0.19	1	0.06
White female	1,609	1,173	70.28	198	11.86	40	2.40	258	15.46	..	....	..	....
Negro male	115	85	73.91	12	10.43	6	5.22	12	10.43	..	....	..	....
Negro female	253	172	67.98	43	17.00	12	4.72	24	9.47	1	0.04	1	0.04
Yellow male	5	...	.....	..	.....	5	100.00	..	....	..	....	..	....
Yellow female	1	1	100.00	..	.....	..	....	..	....	..	....	..	....
	3,622	2,539	70.13	369	10.19	82	2.26	626	17.28	4	0.11	2	0.05

Total number x-rayed	3,622
Total number with positive findings	2,996 or 82.72 per cent
Total number with negative findings	626 or 17.28 per cent
Total number with active tuberculosis, x-ray evidence	2
Total number with suggestive tuberculosis, x-ray evidence	4
Total number rechecked to date	86

ABSTRACT OF DISCUSSION

COL. L. G. ROWNTREE, Washington, D. C.: This is prehabilitation at its best; it is a magnificant accomplishment. This is really what we advocated in prehabilitation three years ago. In Selective Service we hoped that some such program could be started. Startling was a 25.3 per cent rejection rate at 18 to 19 and a 45 per cent rejection rate for the Negro. There is a tremendous need in the Negro as compared with the white race. If we can multiply the results reported for Cincinnati by a hundred and apply this to the nation as a whole, a tremendous step forward will be taken that would mean much in the health movement among the youth of the nation.

DR. R. B. CRAIN, Rochester, N. Y.: I was much interested in what Dr. Wilzbach said about the percentage of heart cases found in his survey. Five and three-tenths per cent seems to me rather large, as it is generally considered, I believe, that between 1 and 2 per cent of school children have organic heart disease. Perhaps the additional x-raying and taking of electrocardiograms may have accounted for that higher percentage.

I was interested that out of the number examined he found a large percentage of rheumatic heart disease. This is in keeping with an experience which the Heart Committee of the Monroe County Medical Society had in Rochester about ten years ago. For four years we examined those students in high schools found in the annual inspection to have some cardiac abnormality, and it was our experience that from 25 to 30 per cent of the total examinees had organic heart disease. I believe our committee was able to free many of these students for normal activities in high school—participation in gymnasium and sports. After consultation with the family physician we were often able to persuade them to give these students more liberty. It is important that students are not continued as cardiac cripples through life through fear of injuring themselves by participation in normal sports. I should like to ask whether in the examination he described the family physician was consulted and greater freedom obtained for those who did not have organic heart disease.

DR. EMERY R. HAYHURST, Columbus, Ohio: I should like to ask Dr. Wilzbach in the follow-up procedures whether an inquiry is made about the nutritional status of these students. What is the fluorine content in general of the Cincinnati water supply, and did they note any correlations that might have a relationship to this high dental caries situation? Is the dental examination apparently limited to the finding of caries meant to include the gums? I have in mind, of course, the possibility of gingivitis without caries.

DR. A. A. PETER, New Haven, Conn.: What record system do you use for the continuation of observation of these thousands of children? Do you, for example, use Wetzel grade and record development on levels of correlation of age and height and nutritional status?

DR. F. L. RECTOR, Lansing, Mich.: I am interested to known what was found in relation to tumors, particularly cancer, in these youngsters. We have made some study of that problem in our work for the state health department in Michigan and have found that we do not have any figures on cancer morbidity; we have had a surprising number of deaths under the age of 20 from various types of malignancy. In compiling our cancer deaths under age 20 we have included leukemia. We recognize it is a form of cancer. It is universally recognized as cancer of the blood cell forming tissues.

DR. BERNARD A. SCHWARTZ, Cincinnati: Two things impressed me that I thought were important: 4 cases of rheumatic heart fever, which I thought an indictment of the general practitioner, not cases coming to the clinic but the white collar case being taken care of by the practitioner. The second point is hypertension. We found 14 cases of high school age students with definite hypertension who were sustained types, because these pressures were checked and rechecked. Mass surveys were made in Cincinnati from 1926 to 1936, giving estimates and percentages of cases of heart disease. The survey made this past year was refined and gave us much more evidence of what is going on in our public schools.

DR. CARL A. WILZBACH, Cincinnati: Only juniors and seniors were examined. There is an accumulation through the years. When you reach the senior year you have a collection through the years during which these youngsters were in school. Maybe that accounts for the higher percentage of cases of heart disease. On the rheumatic fever heart cases we tried to get a letter to the doctor of the child concerned, a sealed letter we hoped would go directly to the family doctor from the cardiologist. Not a great deal was done on nutrition. I think that is an important part of the examination, but is was not tabulated. I cannot give you the fluorine content of the water. Trained dental hygienists made the examination, and I am sure any unusual gum condition would have been reported. With regard to personal follow-up, I should say the children with defects remain on the lists of the school nurse as long as the defects are not corrected. A persistent effort is made to check back to find out if the defects are corrected. While the schools are in session nurse, the classroom teacher, the physical education teacher and the principals all assist. We do not use Wetzel grade in our work. With regard to cancer, we did a rather thorough examination of the skin, and we have recorded those we found with acne and other skin diseases. We did not see anything that we thought was cancer.

PHYSICAL FITNESS IN INDUSTRY

W. P. JACOBS, LL.D.
CLINTON, S. C.

In this war emergency our leaders in Washington have called on the workers in American industry to make and keep themselves physically fit to assure their supreme contribution to the prosecution of the war. Selective Service figures show over one million men of the first two million called for military service rejected as unfit. This represents a serious problem and indicates the difficulty faced by our leaders in organizing an all out war.

Just as the military provides physical fitness training to make and keep the armed forces fit to fight, so must industry, labor and community provide opportunities for training for physical fitness to keep our working men and women in top condition on the home front. In the beginning, however, workers in the specialized fields have a perfect right to ask What specifically is meant by physical fitness? The terms are general and difficult of specific definition. Nevertheless, perhaps the following will suffice.

Physical fitness is a condition which results in a minimum of disability from sickness. It will insure performance of tasks efficiently and well. It will result in rapid recovery from fatigue and exhaustion. It will produce a high degree of health and vigor and a rugged endurance. It will facilitate strong self discipline, the avoidance of soft living, an increased pride in physical vigor; it will encourage self direction and inner determination.

The secret of physical fitness may be said to be adequate medical care, fresh air and sunshine, balanced relaxation, good food, proper sleep, regular exercise. This foundation involves a proper balance of the daily habits, sound eating, ample walking, daily calisthenics, care in exercise, participation in competitive sports most suited for the need of the individual. And above all else it involves patriotic determination to keep fit.

Physical fitness in industry, like other types of preventive treatments, has been slow in catching popular favor, and its growth has been unusually spotted over the United States. Education, while offering an assurance of very definite future dividends, has found the growth of its popularity very slow indeed. As a consequence only a relatively small proportion of the population has actually enjoyed the privilege of a higher education.

Physical fitness in industry involves extensive education to promote its expansion. In fact it is education of a very vital type. Its justification is sound and obvious and yet its adoption is slow and uncertain. The principal reason for this hesitation is that the advantages of physical fitness to industry involve too much of preachment, and the American people have learned the art of consigning most sermons to the other fellow.

Physicians can readily understand the psychology of the American mind, which surveys all prevention with

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skepticism. The average American does not have too much confidence in his own consistency and therefore doubts his own ability to adopt the regular regimen or treatment necessary for prevention. He is much more inclined to let nature take its course and take his chances with the ultimate cure.

It is easy for any one to foresee that physical fitness in industry will increase production, reduce cost of production, improve individual productivity and earning power, assure greater happiness, longer life and better worker morale and perhaps afford a number of other plausible advantages. Yet in spite of the perfectly obvious benefits to be obtained by the workers and by management and stockholders as well, physical fitness is one of those creators of intangible profits the full value of which is not seen at a glance. With the modern industrial humanitarianism, however, the theme is growing in popularity and in value. The adoption of the principle in an industrial enterprise usually brings excellent results when it is planned, adopted and operated with and under the direction and advice of the medical profession.

Physical fitness as it applies to industry involves a highly technical analysis in application, and it produces its best results when undertaken under the influence of the medical profession. Nor is the application of the theme a group problem, as would be believed at the first glance. It is strictly an individual problem. It is the life of the individual which must be made more fit, and the formula required by each individual differs from the other. One man or woman can safely adopt one type of sport or other type of recreation for the building of physique, while another may find it necessary to select an entirely different method. Some can use very vigorous exercises, like baseball, basketball, tennis, football, boxing, weight lifting, hockey or other activities which demand unusual physical exertion, while others may find it necessary to confine their activities to horseshoe pitching, chess, victory gardening or just walking. The well rounded and soundly conducted program of physical fitness in industry must take all of these factors into consideration to be at its best and be based on the careful diagnosis of each individual worker by a competent physician if it is to be safely conducted and if it is to produce the best results.

Next to expert professional advice, the greatest essential of a successful physical fitness program is planning. The ordinary haphazard, hit and miss type of program can easily do more harm than good. There must be systematized planning if the program is to attain proper results, if it is to receive popular acclaim, if it is to earn adequate participation and if it is to avoid the dangers of indiscretions.

Planning involves a careful advanced analysis of the field, of the objectives sought, of the equipment available and possible, of the compelling recreational and athletic habits of the people whom the program is expected to aid. The survey should incorporate adjacent fields, their customs and environment.

It should differentiate between age and sex groups and the potentialities of participation by management, labor and the community. It should be a comprehensive study of all factors which handicap, help or otherwise influence the health and strength of the individual worker. A study of individual and community living habits is essential. A study of diets, a survey of the clinical records covering the industrial community if available will greatly facilitate the analysis of the need of a physical fitness program and the results which may reasonably be expected. Likewise the study of sanitation and a study of the local supplies of food which can be contaminated is indicated. Drainage, garbage disposal, refrigeration and the many other factors which influence community health should be studied to determine whether there are apparent and glaring general conditions which are so flagrant as to jeopardize the health of the community.

However, the secret of the success of a program of industrial physical fitness is found not in the community services but in the education of each individual. Physical fitness is a very personal and individual problem. When and only when the individual is convinced that greater personal health and individual strength will pay him dividends both tangible and intangible can one reasonably expect appreciable results from such a program.

We have heard much talk of state or group medicine, and there is no denying that there is a great deal of glamour attached to such mass practices. However, the actual results of group medicine are disappointing except where the industry-wide effort is intended merely as a forerunner to and a stimulant for individual action. Physical fitness, like medicine, is an individual and very personal function. Its success hinges on the question of what the individual will do about making himself more physically fit. While industrial programs of recreation and sports are built around mass action, their success is measured by the physical condition of each individual, and that is dependent on the correct diagnosis of the need of each individual and the extent to which the individual embraces his or her opportunities to get and keep fit.

Americans, more and more, have quit the playing fields to sit in grandstands and stadiums. We have become a nation of spectators, thrilling to the feats of professionals, semiprofessionals and pseudo amateurs. We rent cushions to sit on at the games and stuff ourselves on peanuts, soda pop and hot dogs.

There is, of course, a place for the great sports spectacles, but there is an even greater need for individual participation in moderate and healthful exercise.

In the adoption of a physical fitness program, management and labor and the community have a responsibility to encourage and aid the individual to become and keep physically fit.

The aim of every program should be participation by all employees.

There should be widespread education as to the importance and the need of physical fitness. All community facilities should be made available. Programs, wherever possible, should be made self supporting and self directing. And, as America will never become enthusiastic about regimented calisthenics, the competitive spirit should be stressed and physical fitness programs built around individual participation and the "will to win" spirit. Leadership should be selected and developed from among the workers themselves. The full cooperation of all community agencies should be enlisted. All types of recreation and sports which lend themselves to the local situation should be utilized to make the program as broad in its coverage as is possible, and the program should be made an all year round effort.

The larger industries throughout the country are making rapid strides in this field. There is nothing

particularly new about it except the emergency in which we are living. From a long range standpoint, the further we go in our high tension type of modern living the more we need to emphasize concerted individual action and keep physically fit. But in the war emergency, when the success of our armed forces is depending so completely on the ability of our workers on the home front, physical fitness in industry becomes a compelling need and utterly indispensable.

The accomplishments so far in this field can be largely credited to the members of the medical profession who have been working so faithfully in preserving the health of the workers in the industries of America. The future success of physical fitness in industry will necessitate the combined capacity of the medical profession of America. It is a highly technical and highly specialized job which involves medicine, psychology, sports, physical education, community planning, leadership and in fact all phases of human life. The program of physical fitness in industry merely offers a vehicle through which the skilled services of the physicians of the country may be broadened in scope and in contribution, in an opportunity for the practical popularization of preventive medicine as well as curative. While the responsibility rests on the individual worker himself, Doctors of America the opportunity is yours.

Thus have I briefly outlined a nontechnical description of a well rounded physical fitness program. The success of this program, of course, depends on the full cooperation of all concerned. Though it is a matter of dealing with preventive medicine, I am not going to say that the full responsibility of the program devolves on the physicians; I am here, however, to pledge the full cooperation and inspired leadership of the agencies of the government designed to promote physical fitness in industries. I am here to pledge the cooperation of the industries of America in executing this program; and while I have no authority to speak for them, I am confident that the medical profession will have the full support of the workers of America and their unions. They are well represented on our committees and are cooperating beautifully in this effort.

Nevertheless, the program will succeed in direct ratio to the full cooperation of all interested: industry, labor, government, education, local communities and, more important than all others, the medical profession. You are needed to do the work of indoctrination, to advise good management in the building and operating of the program and to give professional advice to the industrial workers as they get and keep physically fit.

There will be many who will discourage the building of this program on the assumption that it is another one of those ideals that start well but soon peter out. This is true. It is also true that truth hurts on occasions when the levity of our leaders overlooks the importance of persistence and constancy in a program of this kind. The medical profession can lead, enthusiastically support and lend its professional services and thus encourage a continuous constructive effort. Though physicians do not have the time to assume the leadership of such a national movement, their full support is necessary nevertheless. Without it the program cannot succeed.

It is my firm conviction that if through your counsel and assistance we can build a physically fit America, the step will result in vast benefit to the workers of America and to the medical profession as well. And so I say to you, the medical profession, we laymen in the private and business fields lay this responsibility on you, and we urge you to accept a full measure of the inspiration and action which your profession is so capable of producing.

ABSTRACT OF DISCUSSION

DR. W. A. SAWYER, Rochester, N. Y.: Those of us who have been in industry for a number of years know full well the need for such a program. We know it now especially when the manpower situation is at such a low ebb. The sort of workers that we have today are in great need of rehabilitation and reconditioning. Medicine in industry has practiced prevention or at least has preached prevention and tried to practice it from the beginning. We know that physical fitness makes for greater production, less absence and better health. There have been occasional efforts to develop programs of this character in some industries. Today in most of the larger industries you will find recreational clubs and athletic competitions of various character but little of a specific reconditioning or training for physical fitness. Among executives there have been programs of gymnastics and other physical conditioning processes. I know one industry in which a gymnasium was provided. The supervisors, the executives, were urged and implored to take advantage of it. A number of them did. In the rubber industry I know another instance in which that was done for a number of years, but I have known of no industry in which the program was continuous or which took hold in any large way. In communities where Y. M. C. A.'s, Y. W. C. A.'s and the like offer facilities to industrial workers they are even holding gymnasium classes for the night workers, programs during the day and also programs during the night for some of the shift workers. They have not been great successes, however. There is a lethargy and apathy and indifference to them. It needs some sort of crusading spirit, some sort of new leadership, to develop this idea.

COL. L. G. ROWNTREE, Washington, D. C.: Mr. Jacobs is doing one grand job right now. He is the spearhead of the physical fitness in industry in the nation, under the auspices of the National Committee on Physical Fitness. Mr. Jacobs has told us how it is possible to attain these objectives individually, as communities, and nationally. The problem is largely one of education. It calls for vigorous medical support and leadership. This program really would make of every physician and medical man a counselor as well as a physician, a counselor in physical fitness. That cannot be done without education within our own ranks, because few of us know much about training for physical fitness. Mr. Jacobs is dealing at the present time with sixty million workers. If they will heed and accept and if we heed and accept, then this nation and the individuals in this nation will benefit immeasurably.

DR. CARL A. WILZBACH, Cincinnati: I have had the distinction of being a worker in the physical education field as well as in medicine. It is heartening to hear this paper. The medical profession has never supported exercise and physical fitness as it should have. We have to have wars to demonstrate how much it is needed in industry as well as in school or wherever our people are. It is something that the person has to believe in and then want to do. The job isn't easy unless you have all of the influence bearing on the problem coming to the individual. The medical profession ought to get back of this physical fitness program. The statement that a man after 40 years of age ought not exercise at all is not good advice. Much of the work today in the armed forces or in civilian life is being done by older men who are in good shape physically. If men stop exercising after 40, a great deal of the world's work will not be done.

DR. KINGSLEY ROBERTS, New York: You do not practice health conservation on people; you practice it with them. If you do not lay accent on the educational side of the physical fitness program, no matter how it is backed, it will fail. One factor that has not been mentioned here is the necessity of drawing the worker himself into the program, whether he is organized or unorganized. Such a program must carry with it the urging by the medical profession of the formation of labor-management health and welfare committees which will interpret what the physician has to say in terms that the worker himself will understand and will believe in. The medical care that the worker gets outside of the influence of the industrial physician is as important as the care that he gets within the scope of the industrial physician's activities.

DR. IRVING GRAY, Brooklyn: In a discussion of physical fitness in industry the importance of health education should be stressed. In Brooklyn, through the efforts of Dr. Landes, department of health officer in the Fort Greene district, there has been developed the Fort Greene Health Center. Representatives of industry, organized labor, the county medical society and various public health agencies are all cooperating in bringing to the industrial workers a complete health program. Information as to the importance of physical fitness, proper nutrition and preventive medicine reaches large groups of industrial workers through this organization. The preemployment or preplacement physical examination is essential in determining the character and extent of the activities of an individual in any physical fitness program. The plan of physical fitness in industry should really be an extension of the program which is part of the training in the schools. Industrial relationships which will reduce to a minimum psychosomatic disturbances would greatly enhance the value of a physical fitness program.

DR. MORRIS RASKIN, Detroit: I am from the Health Institute of the United Automobile Workers Union. The UAW-CIO has a recreation department which is developing a physical fitness program. The major difficulty is the method of making the program available to the worker. It is not necessarily true that the worker who does not take advantage of recreational facilities is apathetic. It is difficult for one who works ten to twelve hours a day, on a six to seven day work week, frequently in atmospheres of poor ventilation, suffering symptoms of chest pain, cough or fatigue, to leave his work, travel a number of miles to a point of recreation and then travel home. Therefore, in developing a physical fitness program, recreation facilities should be established in localities convenient to the workers and made available to workers on all shifts. The recreation department has several programs for workers on the midnight shift, with dances in order that their wives may adjust their living habits to the husband's work schedule. These factors are sometimes neglected in the establishment of such programs. The interests and desires of the people are rarely considered in the development and execution of such programs. Other factors also must not be forgotten. The social security factors are important. The worker who is anxious and suffers anxieties because of lack of security is a poor candidate for a physical fitness program. The worker whose housing is inadequate will not be a fit worker, no matter what type of program is developed.

DR. R. B. CRAIN, Rochester, N. Y.: I want to emphasize the old story of the periodic physical examination. In these times of stress and shortage of medical personnel it is not feasible to carry out this program of the annual physical examination, but I hope it will not be too long before that can be done again in many industries. The workers themselves are very anxious to know how they stand physically. It seems to me that any intelligent advice on physical fitness should be predicated on an individual physical examination. Physicians need to be better informed about correction of faulty health habits and poor posture. The physical educators have much to tell us. We have a number of loose ends in our physical examination that need taking up by some one trained to do it.

PHYSICAL FITNESS

ITS EVALUATION AND SIGNIFICANCE

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AND
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It has taken the impetus of war to bring home to us the great importance of physical fitness and to give that subject the attention it deserves: no one can be complacent when one realizes that 1 out of 4 of our 18-19 year old registrants fails to pass his Selective Service examination. But even now physical fitness is too frequently discussed in terms of only one of its various components, and many panaceas and programs are proposed which, although proper in themselves, are no more than single items in a well integrated and complete plan.

In this report three kinds of physical fitness are discussed: first, static or medical fitness, which is concerned with the soundness of the organs of the body; second, functional or dynamic fitness, which has to do with the efficiency of the body in strenuous work; and, third, motor skills fitness, which is related to muscle coordination and strength in performing specific activities. A discussion of these three types of fitness is important, not alone for describing methods and results of testing them and indicating which procedures and programs may be of value in improving the level of man's fitness, but also for emphasizing that a many sided attack is essential. Fitness cannot be evaluated by means of a conventional medical examination alone: the latter appraises the quality of the organism at rest, can separate the sick from the healthy and segregate those having organic defects from those without them but does not reveal functional capacity. In short, such an examination does not provide a complete answer to the question of the examinee's condition and does not classify normal, healthy individuals into various groups according to their physical efficiency.

It is, in a way, unfortunate that this report is limited to physical fitness alone, for obviously the estimation,

TABLE 1.—*A Condensation of Tables Published by Rowntree, McGill and Edwards [1] and Gallagher [2] Which Respectively Indicate the Percentage of Physical Defects Uncovered at the Selective Service Examination of 42,273 18-19 Year Old White Youths and at the Annual Initial Health Examination of 910 Preparatory School Boys.*

Incidence of Defects Causing Rejection Among 18-19 Year Old White Registrants (42,273)		Incidence of Findings Among Preparatory School Boys (910)	
Defect	Per Cent Rejected	Finding	Per Cent
Eye diseases	1.9	Vision of 20/40 or less (uncorrected)	1.9
Defective vision	2.6	Hypermetropia (uncorrected)	7.7
Eyes, all causes	4.7	Hearing loss of 20 decibels or more (all tones)	1.7
Otitis media	1.1	Dental caries (far advanced)	18.1
Deafness	0.1	Tonsillectomy advised	2.3
Ears, all causes	1.6	Rheumatic heart disease	0.7
Teeth, all causes	0.08	Hernia (inguinal)	0.3
Nose and throat (all causes)	0.31	Undescended testes	0.5
Tuberculosis	0.66	Personality disorder	2.3
Rheumatic heart disease	0.31	Speech defect (stuttering)	1.6
Cardiovascular, all causes	1.98	Diabetes	0.2
Hernia (all)	1.59	Musculoskeletal (miscellaneous)	0.8
Syphilis (all)	0.22	Underweight (extreme)	5.9
Mental diseases (all)	2.72		
Psychoneurotic disorders	1.51		
Musculoskeletal (all)	2.2		

From the Department of Health, Phillips Academy, Andover, Mass. (Dr. Gallagher). The Grant Study, Hygiene Department, Harvard University (Dr. Brouha).

maintenance and improvement of both the mental hygiene and the intellectual level of the population are of equal importance. The number of emotionally unfit uncovered by the Selective Service, the number of intelligent but untrained men noted during the course of their military careers, and the fact that almost half of those of our troops sent back to civil life are discharged for some neuropsychiatric disorder are clear indications of the magnitude and importance of this side of the fitness problem. Complete programs should be developed, including facilities for the prevention and correction of physical and mental disorders, for the determination of special skills and aptitudes and for appropriate educational opportunities.

MEDICAL FITNESS

Medical fitness, which is estimated by the conventional examination, must be considered first because it is fundamental. Rowntree, McGill and Edwards [1] describe the causes for rejection from military service, and another report [2] discusses the findings at the annual health examination of preparatory school boys. Each of these reports indicates the desirability of carefully examining members of these age groups and emphasizes the large number of correctible defects to be uncovered among them. The second report also shows that such an examination is far from superfluous even though the majority of the subjects come from economically privileged levels.

In table 1 a brief abstract of certain findings listed in these reports is given. The criteria were not identical, and the percentages should not be compared; both, however, show the desirability of proper, careful examination of these age groups. Such findings make it clear that fitness programs which insist only on exercises and games will fail to decrease the number of rejectees from military service. This decrease will come, first, from the proper control of syphilis, tuberculosis and rheumatic fever; second, by widespread medical examinations leading to the early correction of orthopedic disorders, hernia, nose and throat conditions, dental and visual defects; third, by an increased use of mental hygiene principles, and, fourth, by a proper diet and a better understanding of the fundamental rules of physical hygiene. Emerson [3] has demonstrated the value of weight gain during adolescence as an indicator of good health, and the possibility of improving health by attention to diet, observation of sensible health habits and avoidance of excessive tension.

Not merely in times of war are such health examinations essential; this truism is mentioned here because the relation between good health and efficient day by day work is so obvious that it is often disregarded. There is frequently failure to discriminate between a state of being well and a state of optimum health; too often it is felt that the increment between the two is not worth the time and effort involved. The importance of following the medical examination by the correction of any discovered defects cannot be too strongly emphasized: the efficiency of such examination should be judged, not by the percentage of defects found, but by the number of these defects subsequently corrected.

1. Rowntree, L. G.; McGill, K. J., and Edwards, T. I.: Causes of Rejection and the Incidence of Defects Among 18 and 19 Year Old Selective Service Registrants, J. A. M. A. **123**: 181-185 (Sept. 25) 1943.
2. Gallagher, J. R.: The Health Examination of Adolescents, New England J. Med. **229**: 315-319, 1943.
3. Emerson, W. R. P.: Physical Unfitness in the Preparatory School, Am. J. Dis. Child. **44**: 509-523 (Sept.) 1932.

FUNCTIONAL OR DYNAMIC FITNESS

The ability of a medically fit individual to do strenuous work cannot be estimated while he is at rest or performing mild exercise. In order to evaluate his fitness for hard work he must do hard work. For example, as shown in table 2, the similarity between the cardiac response of two individuals to hopping 100 times disappears after strenuous exercise. Resting heart rates before exercise and those taken at three intervals after each boy hopped 100 times are similar, but after a more prolonged and more strenuous exercise the heart rates show considerable difference: R. W.'s heart rate decelerated rapidly, A. C.'s slowly. The more strenuous test demonstrated differences in functional capacity which the milder test failed to disclose. Similar results were found when comparing the performances of 100 young men walking on a treadmill at 3.5 miles per hour on a 8.6 per cent grade for fifteen minutes with their performances when running at 7 miles per hour, grade 8.6 per cent, up to five minutes. Although statistically the relationship between recovery from mild exercise and hard exercise is a positive one in this material with a Pearson coefficient of correlation of 0.53, it is not clinically practicable to predict the capacity for hard exercise from the reaction to a milder exercise.

TABLE 2.—*A Comparison of the Heart Rates of Two Individuals Taken First After Hopping 100 Times and Then After Performing a More Strenuous Four Minute Exercise*

	Heart Rates Before and After Hopping			
	Sitting	30-60 Seconds	60-90 Seconds	90-120 Seconds
A. C.	74	80	76	72
R. W.	72	76	68	68
	Heart Rates Before and After "Step Test"			
	Sitting	60-90 Seconds	120-150 Seconds	180-210 Seconds
A. C.	72	136	120	112
R. W.	72	80	76	76

It is seen that in order to test dynamic fitness, which we define as the capacity to perform strenuous exercise and recover from it, the test itself must be strenuous. Whether a treadmill, an ergometer bicycle or the more simple step test is used is not important as long as the exercise requires no special skill, utilizes the large muscle groups and gives the heart and lungs so much work to do that a "steady state" cannot be maintained. From tests involving work of this nature, a "recovery index" can be derived. This index is based on the principle that the rate at which the heart decelerates after strenuous exercise provides a means of estimating dynamic fitness.[4] That this assumption is true is demonstrated by the improvement of the index from week to week during a period of training, by a reduction of the index after breaking training, under the stress of inadequate diet [5] or after an acute illness, and by a subsequent gradual rise on resuming exercise or shift to a proper diet.

A simple procedure, the step test, is adequate for reasonably accurate estimation of the recovery index. Slight variations in technic have been devised to make the test suitable for high school boys,[6] high school

4. Johnson, R. E.; Brouha, L., and Darling, R. C.: A Test of Physical Fitness for Strenuous Exercise, Rev. canad. de biol. **1**: 491-503, 1942.
5. Johnson, R. E.; Darling, R. C.; Forbes, W. H.; Brouha, L.; Egana, E., and Graybiel, A.: The Effect of a Diet Deficient in Part of the Vitamin B Complex on Men Doing Manual Labor, J. Nutrition **24**: 585-596, 1942.
6. Gallagher, J. R., and Brouha, L.: A Simple Method of Evaluating Fitness in Boys: The Step Test, Yale J. Biol. & Med. **15**: 769-779, 1942.

girls,[7] college men [8] and college women.[9] For men the test consists in stepping on and off a platform 20 inches high thirty times a minute for no longer than five minutes, a period shown by experience to be adequate for adults. Younger boys and girls exercise only four minutes on a lower platform. The heart rate is counted for thirty seconds one, two and three minutes after exercise has ceased, and the recovery index is calculated by dividing the number of seconds of exercise by the sum of these three heart rates. The recovery index [4] is the

$$\frac{\text{duration of exercise (in seconds)} \times 100}{2 \times \text{sum of pulse counts in recovery}}$$

The higher the score the more fit the individual. Tables have been prepared for the rapid calculation of scores; they also include average indexes for those unable to maintain the exercise for the required period.

It will be noted that, in calculating the recovery index, only the heart rates taken during the recuperation period are used: the initial heart rate, the one prior to exercise, need not be recorded since it does not have a significant relation to an individual's ability to perform strenuous work.[10] For example, as can be seen in table 3, 2 individuals, E. H. and R. K., having an initial heart rate of 70 beats per minute, may well be in very different states of fitness; a subject (C. V.) whose resting pulse is as low as 56 may be in poorer condition and have a lower recovery index than one whose initial heart rate is considerably higher (D. S.); and a subject (J. D.) may improve his condition after training and attain a much higher recovery index without significant change in his initial pulse. The well known effect of apprehension on the heart rate and the consequent difficulty of obtaining a true value for the resting pulse furnish sufficient reason for omitting the initial pulse in testing dynamic fitness. A similar lack of relation has been found between basal pulse rate, systolic or diastolic blood pressure and the capacity to perform strenuous work.[11]

In the course of studies which led to the development of the recovery index and the step test technic, numerous physiologic data were collected and other indexes were calculated.[12] For example, measurements of oxygen consumption and blood lactate levels are of interest and value but are not always practicable because of the technical difficulties involved. On the other hand, the recovery index can be obtained easily and is sufficiently accurate for the purposes for which it has been proposed.

TABLE 3.—*A Comparison of the Initial Heart Rates and Recovery Indexes, Showing the Lack of Relation Between Them*

	Initial Rate	After Exercise (Step Test) Rate 60-90 Seconds	120-150 Seconds	180-210 Seconds	Recovery Index
E. H.	70	146	130	116	61
R. K.	70	104	90	88	85
C. V.	56	130	118	106	68
D. S.	96	51	47	47	83
J. D. (before training)	70	58	56	50	73
J. D. (after training)	74	38	38	36	106

The importance of estimating dynamic fitness cannot be overemphasized: the recovery index indicates the individual's present capacity for strenuous work, is useful as a yardstick in measuring his improvement under training, can evaluate the efficiency of any body building or conditioning program [13] and, in general, helps to answer the question "What condition am I in?" The necessity of improving one's functional capacity is occasionally deprecated, but better than average fitness is desirable, not alone because a rare maximum effort may then be more adequately handled and within a wider margin of safety, but also because the commonplace tasks can be performed with less strain: "qui peut le plus peut le moins." The higher the degree of fitness, the less will any effort displace the individual from his previous physiologic state; consequently the greater will be his reserve for the next job, the quicker his recuperation and the more remote the possibility of excessive fatigue. Therefore, tests for estimating fitness should be part of every thorough health examination of young people and should be repeated during the course of a conditioning program in order to determine the reaction to the program.

Chart 1 shows a wide distribution of fitness scores both before and after a training period. There is a great variation in the state of fitness from individual to individual, and, no matter what training is given, these differences persist. When an unselected group is given a typical secondary school training program, results similar to those shown in table 4 are obtained. In this study a high percentage of those who had low initial recovery indexes had improved by the end of the training period, and the average improvement was

TABLE 4.—*The Distribution of Initial Step Test Scores on a Group of 523 14-18 Year Old Boys, Together with the Percentage of Individuals at Each Score Range Who, After an Eight Week Training Period, Had an Increase or Decrease in the Recovery Index*

Distribution of Initial Recovery Indexes	Number of Subjects	Percentage at Each Score Range Who Improved	Average Improvement in Recovery Index		Percentage at Each Score Range Whose Recovery Indexes Dropped	Average Drop in Recovery Index	Percentage Whose Indexes Did Not Change
20-24	0	0	0		0	0	0
25-29	2	100	25.0		0	0	0
30-34	0	0	0		0	0	0
35-39	1	100	20.0		0	0	0
40-44	0	0	0		0	0	0
45-49	2	100	12.5		0	0	0
50-54	13	100	14.7	12.2	0	0	0
55-59	61	98.4	9.5		1.6	1.0	0
60-64	110	87.2	8.6		9.1	3.2	3.7
65-69	145	82.1	8.5		13.1	3.0	4.8
70-74	101	71.2	8.4		20.9	4.1	7.9
75-79	55	63.6	6.6		29.1	5.1	7.3
80-84	13	61.5	7.4	7.3	30.8	6.2	7.7
85-89	9	55.6	8.6		33.3	6.9	11.1
90-94	10	50.0	6.0		50.0	9.6	0
95-99	1	0	0		100.0	28.0	0
100-104							
105-109		N = 523					
110-114							
115-119							

7. Gallagher, J. R., and Brouha, L.: A Method of Testing the Physical Fitness of High School Girls, Rev. canad. de biol. **2**: 395-406, 1943.

8. Brouha, L.; Graybiel A., and Heath, C. W.: The Step Test: A Simple Method of Assessing Physical Fitness for Hard Muscular Work in Adult Man, Rev. canad. de biol. **2**: 86-92, 1942.

9. Clarke, H. L.: A Functional Physical Fitness Test for College Women, J. Health & Phys. Educ. **14**: 358-395, 1943.

10. Gallagher, J. R., and Brouha, L.: Absolute Physical Efficiency, Yale J. Biol. & Med. **15**: 659-670, 1943. Brouha and Heath.[11]

11. Brouha, L., and Heath, C. W.: Resting Pulse and Blood Pressure Values in Relation to Physical Fitness in Young Men, New England J. Med. **228**: 473-477, 1943.

12. Johnson, R. E., and Brouha, L.: Pulse Rate, Blood Lactate and Duration of Effort in Relation to Ability to Perform Strenuous Exercise, Rev. canad. de biol. **1**: 171-178, 1942.

13. Gallagher, J. R., and Brouha, L.: The Evaluation of Athletic Programs by Means of Fitness Tests, Yale J. Biol. & Med. **15**: 671-677, 1943. Brouha, L.; Fradd, N. W., and Savage, B. M.: Studies in Physical Efficiency of College Students, Research Quart., to be published.

greatest for those whose initial scores were lowest. Conversely, several of those with high initial scores showed a decrease during the training period, and the average decrease was greatest for those whose initial scores were highest. These observations indicate that an average program will most improve the least fit

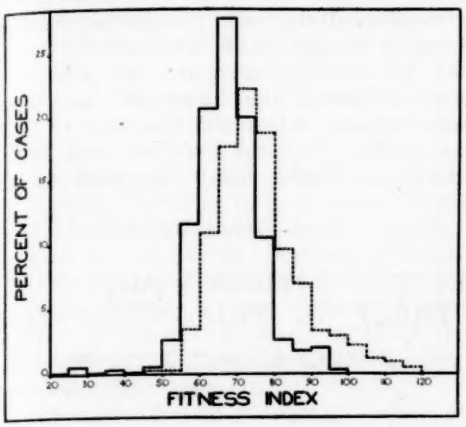

Chart 1.—Distribution of fitness (recovery) indexes of 523 preparatory school boys before and after an eight weeks conditioning period. The solid line represents the initial scores, the broken one those obtained following the training period.

and least benefit the most fit. In order to raise their indexes, those with good initial fitness require a more strenuous program such as is given college oarsmen or schoolboy lacrosse or soccer players. When a group carefully selected to include only those men capable of achieving a high degree of functional fitness is subjected to a strenuous training, all will improve, but not all will improve to the same extent (table 5). Such experiments show that each man undergoing an appropriate training program achieves what is for him a maximum efficiency, related to his physiologic endowment. All individuals, though "medically fit," vary in the quality of their organic constitution and in the level of their potential physiologic efficiency.

The recovery index is not a measure of skill or ability to perform certain specialized activities but is primarily an evaluation of the quality of cardiovascular responses to strenuous exercise. Only when cardiovascular efficiency is a factor in the performance of a given activity should one expect improvement in the one to be accompanied by increased ability in the other.

The recovery index usually deteriorates strikingly during infection; even a common cold can produce definite lowering (chart 2). Compare a runner (J. R.) whose index was determined weekly throughout the training period with a team mate (H. H.) whose training was interrupted by illness but whose physiologic capacities were such that he responded well to training and, week by week, became more efficient, reaching what was his maximum performance under these conditions. A third runner (R. P.) did not have his training interrupted by illness yet failed to respond satisfactorily. This failure of his index to rise significantly during a period of arduous training suggests that continuation might not be beneficial: it may well be that the quality of his cardiovascular system is such that its capacity to improve is limited.

On the basis of such experiments, it may be stated that the value of serial determinations of the recovery index during training cannot be overemphasized.

MOTOR SKILLS FITNESS

The third aspect of physical fitness deals with the individual's ability to perform certain acts requiring strength, coordination and skill. Cureton[14] has recently described several such tests, emphasized the inadequacy of many present physical education and recreation programs and urged that more time and attention be spent in teaching youths to handle their bodies efficiently. If, however, one is merely giving a screening test designed to select the weak, poorly coordinated and unskilful, it is necessary to include only a few motor skills. Vaulting, jumping, climbing and swimming are useful and their proper performance demands a reasonable degree of strength, flexibility and coordination. A simple and easily administered motor skills test, based on these activities, has therefore been devised for high school boys. It consists of a vault over a bar of various heights, a standing vertical jump, a rope or pole climb, a standing broad jump, a swimming test calling for knowledge of four different strokes and the ability to cover 100 yards.[15] "Push ups," "pull ups" and running were not included in the test because they are part of most body building programs.[16]

If one was to choose which of the motor skills tests is most important, swimming would undoubtedly be selected. Cureton[14] states that 26.55 per cent of 2,557 freshmen entering the University of Illinois in 1942 could not swim at all, a much higher figure than that reported by Kiphuth,[17] who found that of 4,163 freshmen admitted to Yale from 1936 to 1941 only 1.7 per cent did not know how to swim. In a preparatory school of 700 boys, 1.6 per cent were unable to swim; 3.7 per cent could not swim 100 yards.[15]

COMMENT

A body building program is desirable for every healthy individual because it assures adequate daily exercise and provides for the general development of all muscles: it gives supplementary attention to the chest and arms of the runner and soccer player, to

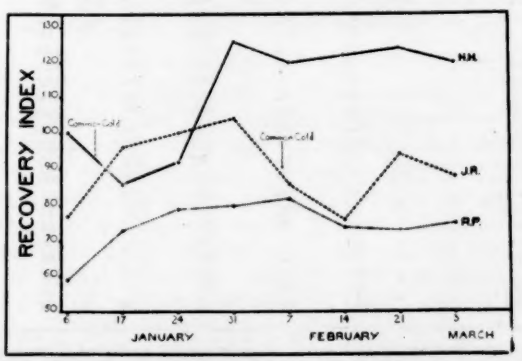

Chart 2.—Changes in the recovery indexes of three athletes at approximately weekly intervals during a short training period. The temporary deterioration of fitness due to a common cold is seen in two of these curves, and the variation in individual response to similar training is evident.

the legs and abdomen of the weight thrower and to the cardiovascular system of all. Well rounded training should recognize these assets of conditioning exercises

14. Cureton, T. K.: The Unfitness of Young Men in Motor Fitness, J. A. M. A. **123**: 69-74 (Sept. 11) 1943.
15. Johnson, T. J.; Schubert, E. J.; Peck, M. E., and Gallagher, J. R.: The Andover Physical Fitness Testing Program, Research Quart. **15**: 16-22, 1944.
16. Johnson, T. J.: The Andover Body Building Program, J. Health & Phys. Educ. **15**: 8-9, 1944. Kiphuth, R. J. H.: How to Be Fit, Yale University Press, 1942. Mass Exercise, Games, Tests, U. S. Naval Institute, Annapolis, 1943.
17. Kiphuth, R. J. H.: Personal communication to the authors.

and also take into consideration the psychologic, recreational and physiologic values of athletics. From our discussion of functional fitness and motor skills it is obvious that a proper physical educational program requires more than calisthenics. Obstacle races, swimming and games such as soccer and lacrosse, which develop endurance and the competitive spirit, are highly desirable. Tennis, squash and handball, which develop coordination, have particular value because they can be continued after school days are over.

Although "a sound mind in a sound body" is a commonplace among educators, some school systems are still reluctant to provide either sufficient time or personnel for the development of adequate physical education programs. The relation between good fitness and efficient academic effort is not always appreciated by the educator, and too often the athletic coach seeks to develop outstanding skill in the few and neglects to improve the all around physical efficiency of many. Often also authorities are timid about strenuous exercise. It is granted that such exercise may be harmful if it is given without knowledge of the individual's medical fitness, and it may also be harmful if not properly graded, gradually increased and carefully supervised. While much can be accomplished from well planned daily exercise, a "thorough workout" once a week will of course result in sore muscles; on the other hand, if the exercise is mild and short, little benefit can be expected. Frequently strenuous exercise is regarded as harmful because an individual was overtired after his initial experience with the exercise he needed: it is to be remembered, however, that fatigue, sore muscles and breathlessness after exercise in a normal individual are eliminated by becoming accustomed to that exercise, not by avoiding it. Occasionally failure to make a proper response to an exercise program may come from an undetected pathologic condition, and such unexpected failure should always call for a repeated physical examination, which may reveal a condition precluding benefit from the program or perhaps even presaging harm if it should be continued or intensified.

TABLE 5.—*Examples of Variations in Physiologic Measurements Before and After Training Twelve Weeks in a Group of Oarsmen*

Subject	Recovery Index		Maximum Pulse During Run		Maximum Lactate, Mg./100 Cc. of Blood	
	Before	After	Before	After	Before	After
Pr.	65	75	195	195	166	142
Fi.	72	78	195	192	133	110
Ma.	77	95	200	180	74	68
Ly.	77	105	195	180	78	75
O.	78	93	195	176	149	90
Br.	78	97	196	168	121	95
An.	80	93	205	186	122	106
Ch.	80	93	193	186	74	74
Wh.	82	112	190	172	108	62
J.	83	91	196	180	93	89
La.	84	94	190	180	117	77
So.	85	98	192	174	130	95
Sn.	87	99	204	178	103	89
Mar.	87	108	173	170	141	83
Cha.	89	100	190	178	77	77
Eu.	89	108	196	182	91	59
Er.	90	117	180	164	102	73
Ri.	92	105	190	170	84	70
Cl.	93	112	185	172	112	64
No.	96	108	185	172	53	50
Cu.	156	181	172	158	68	41

The test exercise in this series of experiments consisted in running for five minutes on a treadmill at a speed of 7 miles per hour and on a grade of 8.6 per cent.

The desirability of developing and maintaining good dynamic fitness and the other advantages to be derived from cultivating motor skills would seem obvious. Nevertheless, neither is receiving proper attention, for Rowntree [18] quotes Colonel Bank as saying "Many young men are entering the Army today totally unprepared for military life. It takes weeks to bring them into physical condition necessary for military training. This means weeks of wasted time and effort which could be avoided if every young man now in high school would engage in physical activities." It must, however, be remembered that such activities cannot be beneficial unless the individual has been found medically fit and unless the program is planned to suit his needs. Physical exercise must be carefully supervised and methodically increased as efficiency grows.

GETTING PATIENTS OUT OF BED EARLY IN THE PUERPERIUM

MORRIS L. ROTSTEIN, M.D.
BALTIMORE

The exact medical regimen of the puerperium has varied from century to century and from one social class to another. Obstetricians of old had their patients lie flat on their backs for fifteen or more days before allowing them out of bed. Their great fear was uterine prolapse. Our present day obstetricians are still adhering to this mode of treatment in part, or in whole, with very few variations. With the current shortage of maternity beds at the Sinai Hospital in Baltimore we have increased our maternity bed turnover by resurrecting the custom of allowing patients out of bed early in the puerperium.

Percival Willughby, Gentleman, in his Observations and Midwifery, written in the 17th century states "I knew a lady that constantly did keep her bed a fortnight after delivery and Gaines Wolveridge, M.D., a late writer in midwifery, in his book, Speculum Matrice, advised the women to keep their bed, 5 days at the least, after delivery. For he sayeth, I know 'tis usual for them to rise at the 3 days' end, but this, to be sure, the longer women contain themselves in their bed, the more secure they are from danger, and I know by experience that his sayings in this case be found very true."

Charles White [1] of Manchester, England, 1728-1813, challenged the practice of keeping patients in bed for a prolonged period after childbirth. In his treatise on the Arrest of Puerperal Fever he states "The patient should be allowed up within a few hours after delivery. The sooner the patient gets out of bed, the better, and this should not be deferred beyond the second or third day at the furtherest." An opposite opinion was held by Robert Gooch,[2] who in 1820 was the professor of obstetrics at St. Bartholomew's Hospital in London. Gooch cautioned his obstetric students not to allow puerperal women out of bed before the 21st day. The following is a quotation from his book on midwifery: "For three weeks after delivery, the patient should be kept chiefly in the recumbent position, the consequence

18. Rowntree, L. G.: Education, Health and Physical Fitness, J. Health & Phys. Educ. **14**: 370-372 and 388-390, 1943.

From the Obstetrical Service of the Sinai Hospital of Baltimore, Inc.

1. Adami, J. G.: The Manchester School; Charles White (1728-1813) and the Arrest of Puerperal Fever, J. Obst. & Gynaec. Brit. Emp. **29**: 1-20, 1922.

2. Gooch, R.: A Practical Compendium of Midwifery, London, Longman [and others], 1831

of setting up soon after delivery with the heavy uterus suspended in the flaccid abdomen will be a prolapsus of this organ."

Allowing patients up out of bed early in the puerperium has not enjoyed widespread adherence in the last several decades, for the public had been educated to think that early rising in the puerperium was prejudicial to health. Until recently, almost all doctors shared this belief without attempting to prove or disprove this point otherwise.

In London during the blitz of 1940-1941 the authorities were fearful of an increased rate of casualties among hospitalized patients. As a result, a great many patients were delivered in the home. However, owing to the absence of proper facilities in their homes, hundreds of patients still had to be delivered in the hospital. These patients were admitted when they were in active labor, delivered, allowed up about a day later and sent home on the second or third day post partum. Reports from abroad showed that no ill effects resulted from this mode of treatment and, in addition, more patients could be accommodated per bed.

Vara [3] states that in the Women's Clinic in Helsingfors 4,447 women were allowed out of bed very soon after delivery. His findings were that the incidence of thrombosis was definitely less in these women than in the women who were permitted to remain in bed for the usual length of time after delivery or operation. Likewise there was an improvement in function of the bowels and bladder, and the period of convalescence was shortened.

The obstetric group of the Alameda County Hospitals in Oakland, Calif.,[4] increased their bed turnover by allowing patients to be sent home early in their puerperium if there were no postpartum complications. In their series of 3,400 cases about one third were discharged on their fourth day, 30 per cent between their fourth and eighth day and about 35 per cent after the eighth day. Their criteria for discharge were no postpartum complications and adequate care in the home. After a careful study they found that no complications occurred that were directly due to early discharge of the patient from the hospital.

Because of the greatly increased number of patients in the obstetric clinic at the Sinai Hospital of Baltimore, with the resultant bed shortage, we decided to allow a series of patients up early in the puerperium to increase our bed turnover and note the various effects if any. One hundred and fifty patients who delivered vaginally were chosen at random and allowed up on their third or fourth day after delivery. Parity and type of delivery were not taken into consideration. However, no patient with toxemia, heart disease or other complication of pregnancy was included in this group. The group was made up of 65 primiparas and 85 multiparas, totaling 150, with 51 spontaneous, 85 low forceps, 8 mid forceps and 6 breech deliveries, with 117 episiotomies.

MODE OF TREATMENT

In this series no ill effects were noted. The patients when allowed up felt well and were able to walk about and take care of both themselves and some of the inbed patients, thus greatly assisting a war depleted nursing staff. When allowed home, which varied from the sixth to the eighth postpartum day, they felt strong and were better equipped to go about their duties of taking care of themselves and their newborn infants. The postpartum routine of these patients was as follows:

ROUTINE

1. Immediately after delivery the patient was encouraged to move about in bed.
2. Ergonovine hydracrylate 1/320 grain (0.2 mg.) was given to each patient every four hours for six doses.
3. The patient was catheterized every ten hours if unable to void, but no antiseptic solutions were instilled.
4. Routine perineal care was instituted, consisting of flushing the perineum with sterile water after micturition and defecation.
5. The patient was put on a full diet immediately.
6. Liquid petrolatum was given on the night of the third day.
7. Starting on the third day, each patient was made to lie on her abdomen for one hour.
8. A soap suds enema was given on the fourth morning.
9. On the morning of the third or fourth day, if the four hourly oral temperature had not been above 99.6 F. for the preceding twenty-four hours, the patient was allowed up in the chair for two hours and again for two hours in the afternoon. Forty-five patients, or 30 per cent, were first allowed up on the third postpartum day and 105, or 70 per cent, on the fourth postpartum day.
10. On the fifth postpartum morning each patient was allowed to walk about as she desired, and she continued to do so until the day of discharge from the hospital.
11. Starting on the fifth postpartum day each patient was put in the knee-chest position for twenty minutes. This procedure was carried out each day until discharge and prescribed for two weeks at home following discharge.

The only criterion used for allowing patients to be up on their third and fourth day post partum was an oral four hourly temperature of not over 99.6 F. for the preceding twenty-four hours. If their temperature was above 99.6 F. they were kept in bed until this requirement had been fulfilled.

It was of great interest to see these patients getting about more and more each day, and on their day of discharge they were able to get about as well as before delivery. Under this routine the patients did not show the usual postpartum weakness and were able to help the inbed patients and spend their spare time packing pads and various sundries for the maternity department.

RESULTS

Lochia.—Normally the lochia consists of blood stained fluid for the first three or four days, after which it becomes paler with each succeeding day until the twelfth or fourteenth day, when it is almost whitish.[4a] In this series the lochia was sanguineous on the third postpartum day and tended to become serosanguineous by the sixth postpartum day. On the day of discharge, which varied from the sixth to the eighth day, the lochia in 60 per cent of the cases was almost serous with very little blood in it. Being up on the third or fourth postpartum day made the lochia a little more profuse, which would be expected, because by standing or sitting upright the flow of lochia is helped by gravity. This increased flow lasted for twenty-four to forty-eight hours and then rapidly subsided, and by the sixth postpartum day the lochial discharge was quite scanty and serous.

The Uterus.—At delivery the uterus is about 2 fingerbreadths below the umbilicus and from this level involutes down to below the symphysis in about twelve to fifteen days. In this series, with the regimen as outlined, involution was notably accelerated. It was found that the uterus involuted from its original posi-

3. Vara, P.: Beobachtungen über das "Frühaufstehen" nach gynäkologischen Operationen bezw. Entbindungen, Acta obst. et gynec. Scandinav. **21**: 168-179, 1941.

4. Black, B. W.: Do Normal Maternity Cases Require Ten Days in Hospital? Mod. Hosp. **60**: 52-53 (Feb.) 1943.

4a. Schumann, E. A.: Textbook of Obstetrics, Philadelphia, W. B. Saunders Company, 1936.

tion immediately after delivery to half way between the umbilicus and the symphysis by the end of the fourth day. By the end of the sixth day the fundus was about 2 fingerbreadths above the symphysis and at the end of the eighth day at the level of the symphysis.

Stander [5] states that at the sixth week postpartum examination 41 per cent of patients examined have retroversions. In this series, uterine retroversions were remarkably decreased. We considered the midposition of the uterus as zero and every position posterior to the midposition as a retroversion. Of the 150 cases examined at the sixth week post partum, and some were examined at a more remote date, 33, or 22 per cent, showed a retroversion and in 117, or 78 per cent, the uterus was in good position.

Bleeding.—As mentioned earlier, the initial bleeding was more profuse than usual on the patient's first day out of bed. Apart from this initial bleeding, no abnormal flow was noted. However, 3 cases of postpartum bleeding were encountered after the patient's discharge from the hospital. In 2 the bleeding occurred during the third week post partum. One responded very well to ergonovine therapy, while the other required dilation and curettage. The curettings showed some retained secundines. The third patient had profuse vaginal bleeding during the seventh week post partum which responded to ergonovine therapy.

Uterine Prolapse.—During pregnancy the uterus is supported by its ligaments, fascia, pelvic floor and abdominal wall in part. Following delivery, all these supports are lax and the possibility of uterine prolapse was regarded with grave concern when this series was started. However, getting patients out of bed on the third and fourth day of the puerperium did not produce prolapse of the uterus in any of the 150 patients. All were examined at the sixth week postpartum clinic and some at other periods more remote from the birth of the baby, and in none of these was uterine prolapse found. One of these patients has been subsequently admitted to the clinic with her third pregnancy, and on pelvic examination she was found to be approximately eight weeks pregnant. Her uterus at the time of examination showed no signs of prolapse of any degree.

Effect on Episiotomies.—One hundred and seventeen episiotomies were done in this series. They were either of the midline or mediolateral variety and chromic 0 catgut was used for the repair. Episiotomies were sutured in the usual manner, and 38 per cent of these were done by junior interns. Early rising post partum seemed to have no adverse effect on these episiotomy wounds. In pursuance of the thesis of getting patients out of bed on the third or fourth day of the puerperium, it was interesting to note that the patients with episiotomies were more comfortable when up and about than when lying in bed. They had a little discomfort on sitting up for the first time, but by the fifth or sixth postpartum day complaints regarding the perineal wound were few indeed. Two of the repairs showed skin separation. The remaining 115 healed by primary intention. At the time of the sixth week postpartum examination, all the episiotomy scars were well healed.

Morbidity.—This was not increased by allowing patients to get up early. In this series of 150, 9 patients had a morbid puerperium, giving a rate of 6 per cent, which is well below the average morbidity rate of service cases (the Sinai Hospital morbidity is 7.5 per cent). Five of the elevations of temperature were due to urinary tract infections, urine cultures being positive for Escherichia coli. Three were due to a low grade endometritis and 1 to an upper respiratory infection. No cases of thrombophlebitis occurred in the series.

5. Stander, H. J.: Williams Obstetrics, ed. 8, New York, D. Appleton-Century Company, Inc., 1941.

CONCLUSIONS

One hundred and fifty patients were allowed up on the third or fourth day post partum. The patients when allowed to get out of bed early feel much stronger and are better equipped to carry on their routine duties at home than those kept in bed the usual ten or twelve days. Involution of the uterus was accelerated and uterine prolapse was not encountered. Morbidity was not increased and the healing of episiotomy wounds was not affected by early rise post partum. No cases of thrombophlebitis occurred, and early postpartum activity lessens the hazard of such a complication occurring. It gives us a means whereby we can increase our turnover per bed in the maternity service.

THE EFFECT OF DIGITALIS ON THE CLOTTING MECHANISM

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It has always been a source of speculation why patients whose auricles have fibrillated for many years suddenly begin to throw emboli into the circulation. There must be some other factor than the presence of stasis. Stasis may exist indefinitely without thrombus formation, and there is no reason why stasis of itself should favor thrombus formation. It is known that superimposed infection is one factor in the production of multiple emboli. However, no attention has been paid in the past to a sudden change in the coagulation system of the blood, which in the presence of auricular stasis may lead to the formation of fresh thrombi. Some of these patients have received digitalis. It is our purpose in this communication to present data on the effect of digitalis on the clotting mechanism; animal experiments were employed to confirm the impressions gained by clinical observations.

While these studies were under way, two communications appeared which furnished experimental support to our contention that digitalis may favor thrombosis. Macht,[1] in a paper read before the June 1942 meeting of the American Medical Association, showed that digitalis shortened coagulation time both in vitro and in the experimental animal. He also pointed out that heparinized animals were more resistant to digitalis poisoning than control ones. He concluded that digitaloid drugs had thromboplastic properties and thus antagonized heparin.

On a small but well controlled series of rabbits, Werch [2] found that when digifolin was given intra-

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1. Macht, D. I.: Experimental Studies on Heparin and Its Influence on Toxicity of Digitaloids, Congo Red, Cobra Venom and Other Drugs, Ann. Int. Med. **18**: 772, 1943.

2. Werch, S. C.: Reduction of the Coagulation Time of Rabbit's Blood by Digitalis, Quart. Bull. Northwestern Univ. M. School **17**: 50, 1943.

venously to the rabbit in comparatively large amounts it caused a significant decrease in the coagulation time of the blood.

In a previous communication, one of us[3] described a simple test of the clotting mechanism which consists of serial determinations of capillary coagulation time after the injection of 10 mg. of heparin. While the normal response remains quite constant in the same individuals, a number of factors have been and are being studied which inhibit or facilitate the response to heparin. It has been our experience that such a heparin tolerance is far more sensitive than single determinations of coagulation time and also more readily available for clinical use than the determination of prothrombin levels. In this study, while prothrombin levels were frequently determined, the response to heparin was used to observe the effect of digitalis on coagulation. To control the effect of dicumarol, prothrombin levels were determined by Smith's bedside test.

In some earlier work on dogs which had previously been vagectomized, it was observed that the usual dose of heparin did not prevent clotting and that the blood was kept from clotting only with much larger doses than were used in the nonvagectomized dogs. Even twice the usual dosage did not always prevent clotting in the cannulas. This neurogenic factor has received consideration in another communication.[4]

CLINICAL OBSERVATIONS

We first wish to present 4 case histories selected from a larger number which have left an impression on our minds. These histories are, of course, not conclusive but seemed suggestive enough to warrant further clinical and experimental investigations.

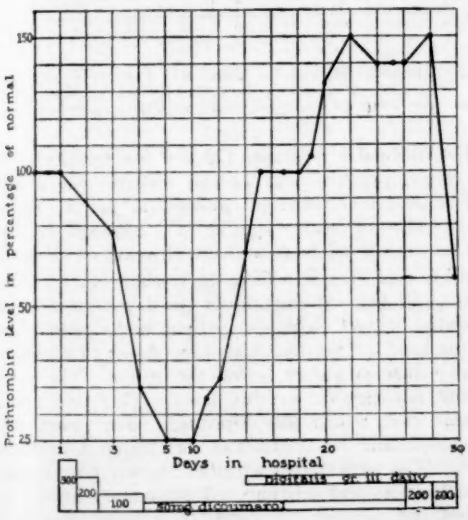
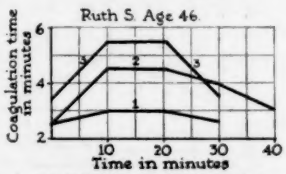


Chart 1 (case 1).—Prothrombin levels. The customary 600 mg. of dicumarol administered in diminishing dosage during the first three days resulted in a definite lowering of the prothrombin levels to 25 per cent of normal on the 5th day. A day previously the dose of dicumarol was cut to 50 mg. a day, which ordinarily will suffice to maintain the level between 70 and 80 per cent of normal. It has never been seen in our experience with this drug to permit a rise above 100 per cent of normal. This happened, however, coincidentally with the administration of 3 grains of digitalis daily; only another 400 mg. of dicumarol was capable of making an impression on the level of prothrombin.

CASE 1.—*History.*—Ruth T. S., aged 46, a housewife, was admitted to St. Luke's Hospital on June 10, 1941, thirty hours after a sudden occlusion of the left femoral artery. There was a previous history of rheumatic fever in childhood followed by rheumatic mitral disease. The heart condition caused no symptoms until an auricular fibrillation developed. This did not return to normal with quinidine. The patient was placed on digitalis and was instructed in regard to its use. She regulated the dosage herself, varying this as indicated by the pulse rate and clinical symptoms. She did this successfully for three years, reporting occasionally for observation. She carried on her normal activities until June 1941 without symptoms. At that time she undertook an extensive trip which entailed a great deal of additional physical exertion. She became much fatigued and experienced some increased shortness of breath. To overcome this she increased her daily doses of digitalis. In a week severe pain in the left leg developed which necessitated her immediate return and her entrance into the hospital.



1: July 1941, after cerebral embolus
2: June 1942, no emboli since July 1941
3: February 1943, no more emboli

Chart 2 (case 1).—Three heparin tolerance curves, showing an improved clotting mechanism since the cerebral-vascular accident. The third curve shows a normal pattern, whereas the second is considered to be at the lower limit of normal.

Examination. — On entrance the left lower extremity was cold and pulseless below the knee. The femoral artery was patent at the groin. A heat cradle was applied to the abdomen. Paravertebral block was done with 95 per cent alcohol to the first, second and third lumbar vertebrae on the left. This warmed up the foot, but the toes remained cold. Papaverine ½ grain (0.032 Gm.) was given intravenously twice a day. She was discharged greatly improved. The digitalis dosage had been restored to the previous low maintenance level. She returned to her country home again with instructions in regard to regulating the dosage according to her needs.

Course.—The next admission occurred on July 7, 1941, when she experienced a hemiparesis after a slight increase in dosage of digitalis. Up until the time of the increased dosage she had been getting 1½ grains (0.1 Gm.) of digitalis daily, together with 100 mg. of dicumarol, which failed to raise the coagulation time as expected (chart 1). Interestingly enough, at the onset of the hemiparesis the pain disappeared in the left lower extremity, in which she had experienced considerable ischemic pain from the previous embolus (chart 2).

CASE 2.—*History.*—Lilly M., aged 45, a housewife, entered St. Luke's Hospital on July 14, 1941 complaining of sudden excruciating pain in both legs, which had started five days previously in Greeley, Colo., at the altitude of 4,600 feet. This patient also had a rheumatic fever in childhood with a resulting mitral lesion and an auricular fibrillation. As in case 1, she had been taught how to use digitalis herself. She did this successfully over a period of years, except for a cerebral-vascular lesion seven years previous to entrance. At that time this was not considered to be connected with the digitalis dosage. Full recovery did not occur and there was some consequent disability. In spite of previous instructions in regard to altitude, she went on a trip to the Colorado mountains, where she experienced dyspnea even when at rest and peripheral edema developed. To overcome these symptoms she increased her digitalis dosage until a thrombosis developed, when digitalis was discontinued.

Examination.—On entrance the patient was in agonizing pain. There was irregularity of the pulse. Auricular fibrillation was present, with a rate of 126 at the apex and 110 at the wrist. The right leg was gangrenous to 3 inches below the knee; the left leg was cold, pale; the sole of the foot showed bluish discoloration. No pulse was palpable in either femoral artery. The diagnosis of old rheumatic heart disease with mitral stenosis and auricular fibrillation, and saddle-embolus of the aorta was made. A right midthigh amputation was done within twenty-four hours.

Course.—In spite of paravertebral injections, heparin and intermittent venous hyperemia, gangrene progressed on the left side so that a midthigh guillotine amputation had to be done on March 14, 1941, under sodium pentothal anesthesia. On Aug. 20, 1941 paraumbilical pain and vomiting occurred. Mesenteric embolism was suspected. The stump healed by

3. de Takats, G.: Heparin Tolerance: A Test of the Clotting Mechanism, Surg., Gynec. & Obst. **77**: 31 (July) 1943.
4. de Takats, G.: The Nervous Control of the Clotting Mechanism, Arch. Surg. **48**: 105 (Feb.) 1944.

primary intention. From August 20 on she had repeated attacks of convulsions. On September 19, with gradually failing heart, she died.

Autopsy.—This revealed chronic rheumatic heart disease, mitral stenosis, mural thrombus of the right auricular appendage, multiple infarcts of the lungs, spleen, left kidney and mesentery, saddle embolus to the aorta and focal softening of the cortex of the frontal lobe.

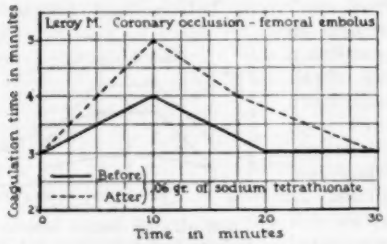


Chart 3 (case 4).—Heparin tolerance. The second curve was obtained after ten days, the patient receiving a daily injection of 0.6 Gm. of sodium tetrathionate.

CASE 3.—*History.*—Margaret M., aged 53, a schoolteacher, entered St. Luke's Hospital on Dec. 7, 1941, three hours after the onset of motor and sensory paralysis followed by severe pain in both lower extremities. There was a history of rheumatic fever at the age of 14 and again at 17. At the age of 21 "enlargement of the heart" was diagnosed and treated with digitalis and prolonged rest. Tonsillectomy was done at the age of 21. Hysterectomy was performed at the age of 37 for fibroids. Gastric hemorrhage occurred at the age of 39, originating from duodenal ulcer. Intermittent attacks of fatigue and ankle edema were treated with digitalis and rest; the exact dosage of digitalis was uncertain and irregular. Severe upper abdominal cramps occurred in the spring of 1941, diagnosed as gallbladder colic and verified by visualization. From Dec. 1 to Dec. 4, 1941 she increased the maintenance dose of digitalis to 3 grains (0.2 Gm.) because of extreme tiredness. On December 4 she developed severe abdominal pain, which was treated with morphine; this was followed by numbness and paresthesia in both lower extremities and a transient attack of blindness; on December 7 at 10 a. m. an embolism to the left femoral artery was diagnosed by Dr. Walter F. Hoeppner. Digitalis was given up to three hours before entrance.

Examination.—The patient was in extreme pain. The heart was enlarged to the left, with a mitral configuration. The auricles were fibrillating, with an apical rate of 150. The urine contained 1 to 10 red cells in several specimens. The left leg and foot were paralyzed, cold and pulseless. The right foot was pulseless, cold and numb but not paralyzed. The left femoral artery was pulseless at the groin; the right femoral artery was patent. Pedal pulses were absent on both sides. A diagnosis of left iliofemoral embolus was made; while intravenous papaverine and paravertebral block lessened the pain, the color and temperature of the extremity did not improve.

Operation and Result.—Six hours after the onset of symptoms, with retroperitoneal massage a large soft red thrombus was delivered through an arteriotomy of the left femoral. Good

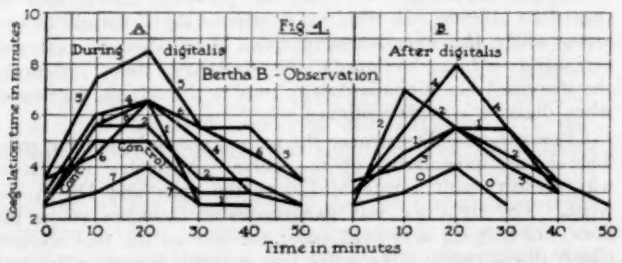


Chart 4.—Heparin tolerance of Bertha B., a patient with no known cardiovascular disease. *A*, heparin tolerance was determined before and almost every day after the administration of 3 grains of digitalis given daily. Note that up to the 5th day the response to heparin increased, possibly because of parasympathetic stimulation; on the 7th day, however, strong resistance to heparin was encountered. *B*, the figures indicate days after the administration of heparin was stopped; the curves promptly show increased sensitivity, actually a rebound as digitalis is being slowly excreted.

flow of blood was established from the proximal and distal stumps. Heparin was started four hours after operation. Digitalis was stopped temporarily.

Convalescence was uneventful. The left leg and foot became warm and pink, but the pedal pulses never reappeared. She was discharged two weeks after operation with well restored movement and sensation in both lower extremities.

Four months later an embolus occurred to the right femoral artery, and seven months later a saddle embolus of the aorta was diagnosed. Right femoral embolectomy was done during the second admission and another left femoral embolectomy was done during the third admission. While the second embolectomy was successful, the saddle embolus of the aorta put an irreversible strain on the previously crippled circulation and she lost both legs above the knee.

Autopsy.—The diagnosis of mitral heart disease, embolus to the bifurcation of the aorta and cerebral emboli was confirmed.

CASE 4.—*History.*—Leroy M., aged 42, an engineer, entered St. Luke's Hospital on May 16, 1942 with a cold, cyanotic, pregangrenous left leg. For the past six months there was pain on walking in both calves. A month before entrance he had suffered an acute coronary occlusion; he got out of bed against his doctor's advice on the second week and went back to work. Approximately three weeks after the onset of chest pain his left leg became numb and pulseless. Five days prior to the onset of the pain in the left leg he had begun to take 3 grains of digitalis daily because of a "rapid heart." The acute vascular occlusion in the leg was treated at home for ten days before entrance.

Examination.—On entrance the left femoral artery was pulseless at the groin; the entire extremity was mottled, purplish blue to 3 inches above the knee. The heart was enlarged

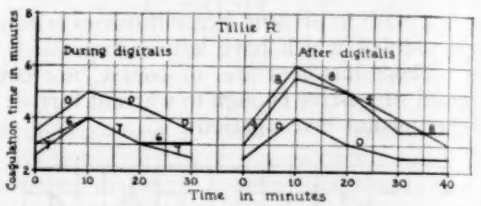


Chart 5.—Heparin tolerance of Tillie R. For the dosage of digitalis, see text. On the 6th and 7th days the curves become much flatter; again after the drug was stopped there appears a rebound.

to the left, the pulse rate was 120 and intermittently irregular, and the blood pressure was 120/82. There was a pericardial rub. The electrocardiogram showed a partial heart block with nonconducted beats, sagging ST segment in leads 1-4, low QRS group in all leads and low T wave in all leads.

Operation and Result.—Two days after entrance, with the diagnosis of iliofemoral embolus of ten days' duration following a myocardial infarct, with the patient under spinal anesthesia and at the level of positive histamine flares, a circular amputation was done 6 inches below the groin. The artery was empty and nonsclerotic at this level. The vein contained a soft friable clot, which was aspirated. The stump was completely closed, and heparinization was begun four hours after operation. The patient had a rather stormy course marked by fever, restlessness and delirium. A pulmonary infarct was suspected but not proved. A cerebral embolus may have been responsible for the mental symptoms. The patient left the hospital in good condition on the twenty-second day. He died a year later, at home, of another coronary occlusion.

Studies of Clotting Mechanism.—Two heparin curves are available, one on entrance and one after a course of sodium tetrathionate injections. This drug corrected the initial heparin resistance (chart 3).

These cases are merely illustrative of a number of clinical histories in our files. There are obviously other factors operating in many of these cases and certainly we cannot say that digitalis alone was responsible for the formation of thrombi and emboli. Thus in case 4 the myocardial infarct alone is frequently responsible for the mobilization of the clot, but it is significant that this occurred five days after daily doses of 3 grains of

digitalis were begun. However, these case histories stimulated us to proceed to more clearcut clinical and experimental observations on the subject.

Thus we placed Bertha B., aged 55, who entered St. Luke's Hospital for observation, on 3 grains of digitalis, which was maintained for six days. Heparin tolerance was determined daily before and daily after the onset of medication. After the seventh day the drug was stopped and the heparin tolerance was determined for another four days. On the left side of the graph (chart 4) is seen the control curve and subsequent curves which show an increased reactivity to heparin up to the fifth day, on which day the patient showed a characteristic curve for a hyperreactor.[8] On the sixth day the curve flattened somewhat, whereas on the seventh pronounced resistance to heparin was encountered. This same tolerance curve is shown again on the right as a zero curve. The tolerance rose very fast, on the fourth day exhibiting again a sensitivity to heparin, possibly due to the parasympatheticomimetic action of digitalis.

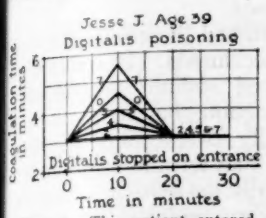


Chart 6.—This patient entered the hospital with digitalis poisoning; the digitalis was stopped on entrance. A normal tolerance curve was obtained on the 7th day.

In the case of Tillie R., who was placed on 3 grains of digitalis for one day, followed by daily doses of 1½ grains (0.1 Gm.), the curves became flat on the 6th and 7th days (chart 5). On the 7th day the drug was stopped, and again we observe the rebound to heparin sensitivity between the 4th and 8th days after digitalis was discontinued.

Jesse J., aged 39, with rheumatic heart disease, was admitted to the hospital with digitalis poisoning; digitalis was stopped on entrance. In chart 6, 0 represents the day of entrance. The greatest resistance to heparin was encountered on the 2d day, at which time heparin failed to raise the capillary coagulation time at all. Then the curves improved and on the 7th day one encounters again a normal curve.

To 2 patients, 6 grains (0.4 Gm.) of digifolin was given intravenously, the tolerance curves being determined before and one and one-half hours after the administration of the drug (chart 7). Both curves are normal before the drug was given. In the case of Patrick M. the curve became entirely flat after digitalis; in the second case the response was subnormal, but the change still quite noticeable. There were no clinical symptoms of any note, certainly no vomiting or diuresis.

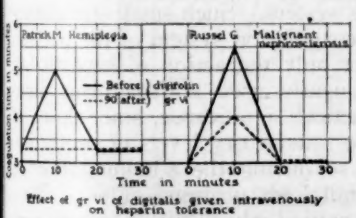


Chart 7.—Tolerance curves before and after a single intravenous dose of digitalis. The total dose of the drug is small; dehydration can be excluded in these experiments. The effect of digitalis in increasing the clotting factors is striking in both experiments.

EXPERIMENTAL STUDIES

Healthy dogs weighing from 9 to 11 Kg. were first accustomed and conditioned to the heparin tolerance curves, which were determined at frequent intervals. The dogs were finally brought into a basal state, where they jumped on the table and were absolutely quiet during the serial determinations of coagulation time. From 0.2 to 0.1 mg. of heparin per kilogram of body weight was injected intravenously and capillary coagulation times were determined before and ten, twenty and thirty minutes after the injection of heparin. The shape of the curves (chart 8, top column) was very much like the ones obtained in the human being. Only slight daily variations were encountered. Homer received 3 cat units daily from May 28 to June 8, 2 cat units from June 8 to June 21 and 3 cat units from June 21 to July 2. It will be noted that the heparin response promptly decreased after the administration of digitalis and together with the weight loss. During the last few days of the dog's life the curve flattened out completely. The dog's weight dropped from 11.5 Kg. to 7.75 Kg. at death.

In the case of Whitie, after six tolerance curves with 0.1 mg. of heparin per kilogram of body weight 1 cat unit daily was sufficient to diminish the response to heparin; in fact, on March 20 the response to heparin disappeared entirely. This dog was given 1½ cat units of digitalis for one month and then again 1 cat unit for nine days. Comparing the curves in the top column with those in the bottom, the decreased reactivity to heparin is striking (chart 9).

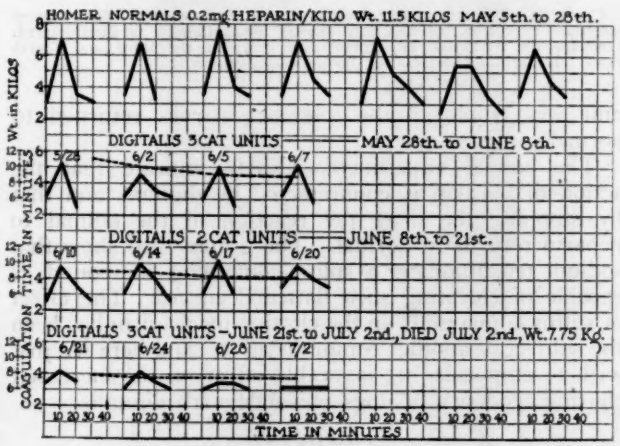

HOMER. NORMALS 0.2mg HEPARIN/KILO Wt. 11.5 KILOS MAY 5th. to 28th.
DIGITALIS 3 CAT UNITS —— MAY 28th. to JUNE 8th.
DIGITALIS 2 CAT UNITS —— JUNE 8th. to 21st.
DIGITALIS 3 CAT UNITS - JUNE 21st. to JULY 2nd, DIED JULY 2nd, Wt. 7.75 Kg.
COAGULATION TIME IN MINUTES
TIME IN MINUTES

Chart 8.—The effect of digitalis on the heparin tolerance of a normal dog. Curves were run almost daily, but only a few of them are shown. The heparin response promptly diminished after administration of digitalis was begun. The top row contains the control curves; the bottom row shows a complete heparin resistance. The animal died on July 2. Digitalis effect was obvious after the first 15 cat units.

In the case of Oscar, 3 cat units from May 28 to June 9, 1943 followed by 2 cat units from June 10 to June 12 resulted in a complete abolition of the response to heparin. The dog's weight dropped from 9.7 Kg. to 7.4 Kg. in twelve days, at which time, on June 9, 1943, heparin was ineffective in the dose employed (chart 10). In the next graph (chart 11) after seven tolerance curves 2 cat units were given daily from March 23 to April 20. The effect of this medication on the curves is unmistakable. Digitalis was discontinued and together with the weight curve the curves rose until a normal response was obtained. Next the dog was again placed on 2 cat units and later on 1 cat unit of digitalis, but simultaneously 0.1 Gm. of sodium tetrathionate was given intravenously. This medication seemed to afford some but not complete protection against the thromboplastic property of digitalis. On June 21 and June 24 the curves were quite flat after the ingestion of 42 cat units. However, with the daily dose of 1 cat unit the sulfur compound seemed to cope better.

In the case of Blackie (chart 12) we again managed to develop a striking resistance to heparin after not more than twelve days of a total of 24 cat units. Again after discontinuing digitalis the heparin tolerance returned to normal. On May 3, thirteen days after the drug had

been discontinued, the heparin curve was normal. Digitalis was started again, now together with sodium tetrathionate in daily doses of 2 cat units. As in the previous graph, the sulfur compound did not sufficiently protect the dog against 2 cat units daily, but when 1 cat

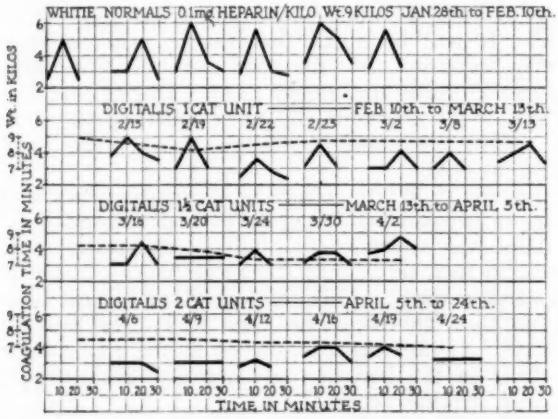

WHITIE NORMALS 0.1mg HEPARIN/KILO Wt. 9 KILOS JAN 28th. to FEB. 10th.
DIGITALIS 1 CAT UNIT FEB. 10th. to MARCH 13th.
DIGITALIS 1½ CAT UNITS MARCH 13th. to APRIL 5th.
DIGITALIS 2 CAT UNITS APRIL 5th. to 24th.
Wt. in KILOS
COAGULATION TIME IN MINUTES
TIME IN MINUTES

Chart 9.—The top curve represents control curves; the heparin tolerance curves flatten out very shortly after digitalis is administered. Compare the first row of curves with those of the third and fourth rows. Heparin is inactivated during digitalization.

unit was employed the tolerance curves returned to normal.

The animal experiments clearly indicate that the action of heparin is counteracted by digitalis and that by stopping the drug the reaction of the animal to heparin returns to normal. The graphs also show that sodium tetrathionate, a sulfur-containing compound, is capable of elevating such flattened curves. The effect of sulfur compounds on the clotting mechanism has been the subject of another communication [5] and here we just wish to emphasize its favorable effect on the increased clotting tendency of dogs poisoned with digitalis.

COMMENT

While the case histories presented are only suggestive, the additional clinical observations and the animal experiments leave no doubt that digitalis affects the clotting mechanism. The fact that heparin is less effective

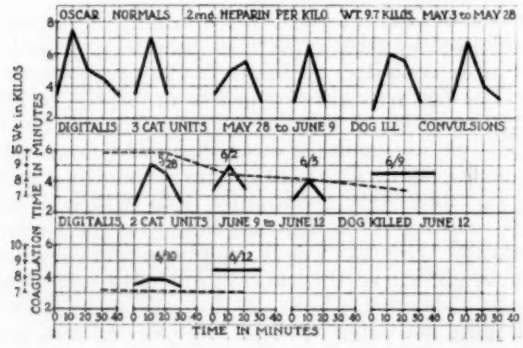

OSCAR NORMALS 2mg. HEPARIN PER KILO WT. 9.7 KILOS MAY 3 to MAY 28
DIGITALIS 3 CAT UNITS MAY 28 to JUNE 9 DOG ILL CONVULSIONS
DIGITALIS 2 CAT UNITS JUNE 9 to JUNE 12 DOG KILLED JUNE 12
Wt. in KILOS
COAGULATION TIME IN MINUTES
TIME IN MINUTES

Chart 10.—A normal heparin tolerance is converted to a complete resistance to heparin. Note heparin curves on 6/9, 6/10 and 6/12.

in the presence of digitalis action must mean that somewhere in the coagulation system digitalis opposes heparin. We have no data as to the mechanism of this action. Digitalis may have thromboplastic properties; it may mobilize prothrombin from the liver or even increase thrombin or fibrinogen. As a poison it may interfere with the oxygen-carrying power of the blood.

5. de Takats, G.: The Effect of Sulfur Compounds on the Clotting Mechanism, Surgery **14**: 661, 1943.

For practical purposes it seems obvious that, pushed beyond a certain point, it definitely favors thrombosis and embolism. It would seem desirable to watch the clotting mechanism from time to time in patients who require digitalis, and particularly in those whose auricles fibrillate, since here the factor of auricular stasis greatly adds to the hazard of thrombosis.

Elsewhere one of us [5] has studied the effect of sulfur compounds on the clotting mechanism. It was found that intravenously administered sodium tetrathionate invariably increased heparin action, but no drug was found that could be given orally for the same purpose. In our animal experiments, sodium tetrathionate seemed to prevent the action of digitalis on heparin tolerance. This drug has proved to be very useful in controlling the activity of Buerger's disease and may possibly be used after any type of thromboembolic phenomena to decrease the incidence of recurrence.

The action of small doses of digitalis, when the drug is accumulating or being slowly eliminated from the body, is equally interesting. During such a phase the heparin tolerance is increased; patients show a sensitivity to heparin. Since the parasympathetic drugs

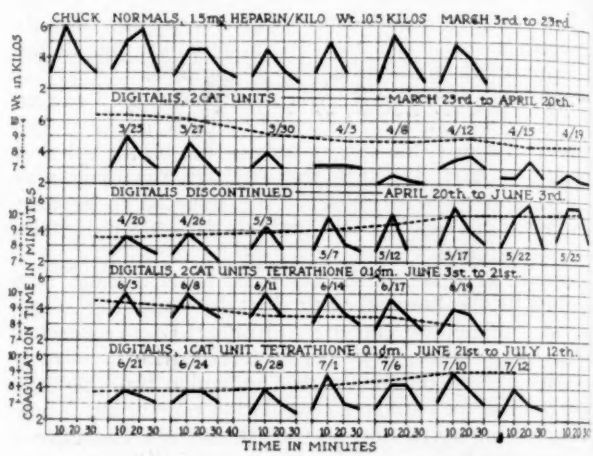

CHUCK NORMALS, 1.5mg HEPARIN/KILO Wt. 10.5 KILOS MARCH 3rd. to 23rd.
DIGITALIS, 2 CAT UNITS MARCH 23rd. to APRIL 20th.
DIGITALIS DISCONTINUED APRIL 20th. to JUNE 3rd.
DIGITALIS, 2 CAT UNITS TETRATHIONE 01gm. JUNE 3st. to 21st.
DIGITALIS, 1 CAT UNIT TETRATHIONE 01gm. JUNE 21st. to JULY 12th.
Wt. in KILOS
COAGULATION TIME IN MINUTES
TIME IN MINUTES

Chart 11.—This graph illustrates the effect of digitalis administration and its withdrawal on heparin tolerance. When digitalis was discontinued the tolerance curves returned to normal. Sodium tetrathionate effectively counteracted the action of 1 cat unit of digitalis; 2 cat units, however, flattened the curves in spite of sodium tetrathionate given daily. This dose of tetrathionate (0.1 Gm.) should probably be increased.

mecholyl and neostigmine have such action [4] it may be that this is an expression of the affinity of digitalis to the cholinergic nervous system. Such small stimulating doses may benefit the coagulation system of the patient.

Digitalis opposes not only the action of heparin but that of the other frequently used anticoagulant dicumarol. This is of practical significance, since doses of dicumarol that produce satisfactory levels of prothrombin are unable to do so during the administration of digitalis or another digitaloid, urginin. This is illustrated in chart 13 in a patient whom one of us saw with a femoral embolus in the presence of a rapid auricular fibrillation. We are indebted to Dr. George W. Parker of Peoria for the data shown in this graph. It will be noted that to the customary dose of dicumarol, namely 300 mg. the first day, 200 mg. the second day and 100 mg. the third day the prothrombin level responded with alacrity. When the prothrombin level fell to 35 per cent of normal a maintenance dose of 50 mg. a day was prescribed; this failed to hold the level. On September 25 1 unit and on the 20th 2 units of digitalis were given. It was necessary now to give 100 mg. of dicumarol daily to obtain another drop of the prothrombin level, but

again 50 mg. would not hold it. Finally a third time 100 mg. was administered, which again resulted in a drop, although only to 78 per cent; but when urginin was started the prothrombin level failed to drop, although a total of 1,300 mg. of dicumarol was given in thirteen days. A month previously the same patient

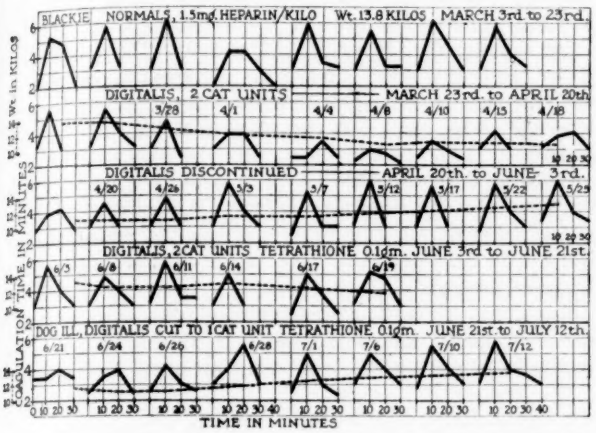

BLACKIE NORMALS, 1.5mg. HEPARIN/KILO Wt. 13.8 KILOS MARCH 3rd to 23rd.
DIGITALIS, 2 CAT UNITS MARCH 23rd. to APRIL 20th.
DIGITALIS DISCONTINUED APRIL 20th. to JUNE 3rd.
DIGITALIS, 2 CAT UNITS TETRATHIONE 0.1gm. JUNE 3rd to JUNE 21st.
DOG ILL, DIGITALIS CUT TO 1 CAT UNIT TETRATHIONE 0.1gm. JUNE 21st to JULY 12th.
TIME IN MINUTES

Chart 12.—Top row shows normal control curves. Digitalis flattens out the curves, but after its withdrawal the curves become normal. Sodium tetrathionate again fails to protect the animal from 2 cat units a day but is effective against 1 unit. Undoubtedly the dose of sodium tetrathionate was too small, since the dose in man is six times as great and digitalis was given in doses given to man.

responded to the same total dose with a drop of 35 per cent of normal. This dicumarol resistance cannot be due to any other change in the patient's vascular status, since diet, fluid intake and clinical symptoms were identical.

SUMMARY

Clinical observations, clinical studies and animal experiments indicate that digitalis favors the tendency to thrombosis. This is especially significant in patients in whom other factors, such as stasis or infection, are already operating. With the help of a simple test, which can be carried out in a small hospital or in the home, one can watch for such an effect of digitalis. Auricular and ventricular thrombi and subsequent emboli have been observed in digitalized patients. Outside of the usual anticoagulants, such as heparin and dicumarol, sodium tetrathionate seems to be capable of opposing the thrombogenic property of digitalis.

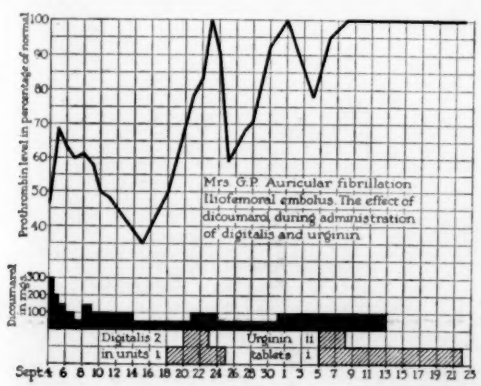

Prothrombin level in percentage of normal
Mrs G.P. Auricular fibrillation Iliofemoral embolus. The effect of dicoumarol during administration of digitalis and urginin
Dicumarol in mg.
Digitalis 2 in units 1
Urginin tablets 11 1
Sept. 4 6 8 10 12 14 16 18 20 22 24 26 28 30 1 3 5 7 9 11 13 15 17 19 21 23

Chart 13.—Note that the prothrombin level, which was readily kept under 50 per cent of normal, promptly rose when digitalis was administered. When urginin was given it was impossible to get a lowering of the prothrombin level in spite of the fact that a total of 1,300 mg. was administered in thirteen days. A month previously the same patient responded to the same total dose with a drop of the prothrombin level to 35 per cent of normal.

122 South Michigan Avenue—104 South Michigan Avenue.

Clinical Notes, Suggestions and New Instruments

DEATH FOLLOWING ATTACK BY SHARK CARCHARODON CARCHARIAS

CAPTAIN B. H. KEAN
MEDICAL CORPS, ARMY OF THE UNITED STATES

Controversy as to whether or not sharks will attack human beings has raged so violently in popular magazines and Sunday newspaper supplements that the medical and military importance of the subject may have been obscured. Injuries often attributed to sharks have been shown on closer investigation to have been inflicted by fish such as the barracuda. For this and other reasons some have been inclined to ridicule or deny the danger of sharks. The present case is reported because scientific identification of a shark which attacked a human being is rare.

Fig. 1.—Note tip of tooth placed on anterior surface of left leg. The photographs from which the illustrations were made were taken by the Signal Corps, U. S. Army, Panama Canal Department.

REPORT OF CASE

The attack occurred at 2:35 p. m., Sept. 23, 1943, in a shallow cove about 75 feet off the north shore of Rey Island, Gulf of Panama, Pacific Ocean, where a navy boat had anchored. No refuse had been dumped into the cove; no sharks were seen.

A sailor aged 20, wearing swimming trunks, dived into the water to determine if the ship's propeller had been fouled or damaged. As he came up he was attacked by a "man-eater" shark 6 or 7 feet long, which was seen at close range by the captain and by several members of the crew. It was impossible to shoot the fish without subjecting the sailor to danger, for

From the Board of Health Laboratory, Gorgas Hospital, Ancon, Canal Zone.

This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the U. S. Navy. The opinions and views set forth in this article are those of the writer and are not to be considered as reflecting the policies of the Navy Department.

both were thrashing about, the shark making repeated attacks. The injured man was lifted on deck within one minute of the initial attack. He was bleeding profusely from wounds of the left leg. A tourniquet was applied to the left thigh, emergency dressings were appropriately placed, and he was rushed to the local Naval hospital, where he arrived three hours later, exsanguinated and in shock.

Fig. 2.—Note gashes on left foot and arched pattern of lacerations, set B.

Following the administration of anti-shock measures, he was taken to the operating room, where the left popliteal artery was repaired, the popliteal vein was ligated and muscle groups were rapidly approximated. A tip of a tooth found beneath the muscles in the popliteal fossa was removed. The patient died in shock four hours after admission and seven hours after the injuries were received.

A complete autopsy, including examination of the head, was performed at the Board of Health Laboratory, Gorgas Hospital, eleven hours after death. There was evidence of exsanguination; some congestion and edema of the posterior portion of the lungs were present. The only other lesions of interest were the injuries which are shown in the accompanying illustrations. A half dozen series or sets of lacerations, arranged in arches, were present on the lower third of the left thigh, the left leg and the left foot. A set of lacerations involved the anteromesial aspect of the middle of the right leg, and there were irregular lacerations of the left hand and right great toe. A tooth pattern suggestive of two, three and four rows of teeth could be recognized in several of the series or sets of lacerations.

Set A (fig. 1), which consisted of twelve individual lacerations averaging 1.5 cm. in length, arranged in two rows, extended deeply into the left knee joint. The medial condyle of the femur, especially the cartilaginous surface, was crushed. Wedged into niches in the condyle were fragments of teeth, the largest measuring 1 cm. in its greatest dimension and similar to the fragment illustrated in figures 1 and 3.

Set B (fig. 2) involved the posterior and lateral aspects of the lower third of the left thigh. When the sutures were removed, the lacerated skin, subcutaneous tissue and biceps femoris, semimembranosus and semitendinosus muscles fell away, exposing the popliteal fossa (figure 3). The torn popliteal artery had been adequately repaired. The vein had been severed, and both ends ligated. The tibial nerve just distal to its origin from the sciatic nerve was irregularly torn but not completely severed.

In figure 3 is shown the tip of a tooth as it was found by the surgeon at the time of operation. On the popliteal surface of the femur were several grooves and gashes, and it appeared likely that the tip of the tooth broke off after striking the femur in this area.

Sets C and D (fig. 1) extended through the soft parts to each tibia, which was nicked and grooved; several tiny, irregular fragments of teeth were found in the periosteal tissue.

IDENTIFICATION

The tips of two teeth, one removed from the popliteal fossa by the surgeon (fragment shown in figures 1 and 3), and one removed from the medial condyle of the left femur, were shown on Oct. 12, 1943 to Mr. John T. Nichols, curator of recent fishes, of the American Museum of Natural History, New York, who identified them as "tips of the teeth of a small so-called man-eater shark Carcharodon carcharias, and from a small individual of this species probably not more than 7 feet or so long." Dr. C. M. Breder Jr., curator of the New York Aquarium, concurred in the identification.

COMMENT

In 1929 Phalen[1] reported a case of unprovoked shark attack in which a native Panamanian youth was attacked while swimming off Taboga Island, which is about 35 miles from Rey Island. The shark, seen by several persons, tore a leg off the swimmer. The shark was caught two hours later, and the leg and a portion of the bathing suit were found within it.

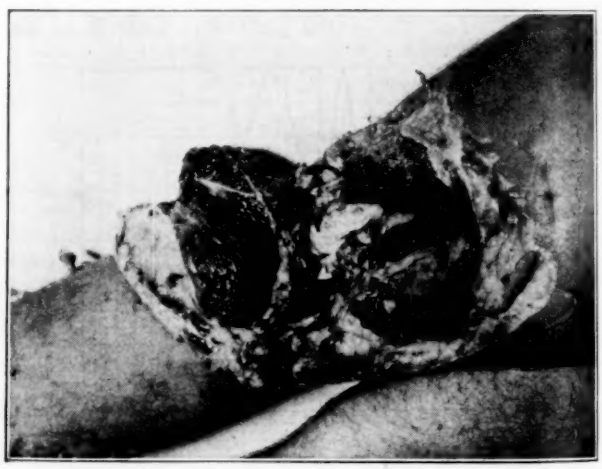


Fig. 3.—Note tip of tooth in left popliteal fossa, as found at time of operation.

Conclusive evidence is at hand, therefore, that sharks will attack human beings. A discussion of frequency of such attacks in various parts of the world and of the use of shark repellents is beyond the scope of this report.

1. Phalen, J. M.: Fatality from Bite of Shark, Mil. Surgeon 64: 383 (March) 1929.

A SUGGESTED THERAPY FOR THE PREVENTION OF GRANULOCYTOPENIA INDUCED BY THIOUREA

E. D. GOLDSMITH, PH.D.; ALBERT S. GORDON, PH.D.; GRACE FINKELSTEIN, B.A., AND HARRY A. CHARIPPER, PH.D.
NEW YORK

The administration of thiourea and its derivatives and the sulfonamides to animals results in the development of a state of hypothyroidism.[1] These substances produce this effect by interfering with the synthesis of normal thyroid hormone.[2] Clinical studies have shown that thiourea and thiouracil are effective in the treatment of hyperthyroidism.[3] The possibility of the occurrence of agranulocytosis in patients treated with these drugs has been indicated in the work of Astwood.[4] The present work will demonstrate that a neutrophilic granulocytopenia also results from feeding thiourea to adult rats. Since the granulocytopenia produced in weanling rats fed sulfonamides has been corrected by liver,[5] it was decided also to test the effects of solubilized liver [6] on the thiourea-induced neutropenia.

Eighteen adult male rats weighing 200 to 240 Gm. were fed a standard laboratory ration containing 0.5 per cent thiourea for fifty-eight days. Six animals of another group were treated similarly but in addition received 5 per cent of solubilized liver incorporated in the ration. Seventeen animals served as untreated controls. Blood samples were taken from the tail of each animal at the three different times indicated in the accompanying table. Total erythrocyte and leukocyte counts were made in duplicate. Red cell counts were required to agree within ± 4 per cent, and white cell counts to within ± 10 per cent. Reticulocyte counts were made from wet smears of whole blood previously diluted with 2 per cent sodium citrate and stained with brilliant cresyl blue. One thousand erythrocytes were counted for each determination, and the reticulocytes expressed as a percentage. Hemoglobin determinations were made with a Fisher electrohemometer. Differential white cell counts were made from dried blood smears treated with Wright's stain.

It will be observed from the table that a significant diminution in the total white cell count occurs in the rat after approximately forty days on thiourea and is not intensified by continuation of treatment. The most striking hematologic change observed in the animals receiving thiourea ration is the pronounced neutrophilic granulocytopenia. This condition becomes progressively more severe with continued treatment. It is to be observed, however, that administration of the liver almost completely prevents the development of the neutropenia. Eosinophil and monocyte percentages are not affected by thiourea. No typical basophils were encountered in any of the normal or experimental animals. The data also indicate that the thiourea-induced anemia is not accentuated and does not respond to liver therapy. There is, moreover, practically no change in the hemoglobin concentrations and the reticulocyte percentages.

It would thus appear that the granulocytopenia induced by administration of either the sulfonamides [5] or thiourea, as shown in the table, may be prevented by liver. A norite eluate fraction of liver has been found to alleviate the leukopenia in monkeys maintained on a synthetic diet [7] and that induced in rats by sulfaguanidine.[8] Waisman and Elvehjem [7] have proposed that folic acid is the active agent in this liver fraction. By using the crystalline material, Daft and Sebrell [9] have demonstrated that the corrective factor is actually folic acid. In view of these findings, the use of folic acid or liver in the prevention and treatment of the granulocytopenia resulting from the administration of thiourea compounds in hyperthyroid patients is suggested.

Effects of Thiourea and Thiourea Plus Liver on the Formed Elements of Blood in the Rat

Experimental Treatment	Duration of Treatment (Days)	R. B. C. (Millions per Cu. Mm.)	W. B. C. (Thousands per Cu. Mm.)	Hb. (Grams per 100 Cc.)	Reticulocytes, %	Neutrophils, %	Lymphocytes, %	Monocytes, %	Eosinophils, %
Normal (untreated)	—	8.5 (7.6-9.7)	22.1 (17.1-27.1)	14.8 (12.5-17.0)	1.1 (0.1-3.2)	32.7 (25-39)	63.2 (44-74)	1.7 (0-4)	2.4 (0-5)
Thiourea	21	6.9 (6.0-7.3)	21.2 (18.2-26.8)	14.6 (14.5-15.0)	1.9 (1.6-2.0)	10.0 (8-13)	86.3 (82-88)	1.2 (0-3)	2.6 (1-6)
Thiourea plus liver	21	7.6 (6.9-8.2)	21.3 (17.4-28.7)	14.3 (12.5-15.0)	2.2 (1.2-3.0)	27.7 (6-47)	68.9 (44-88)	1.4 (0-3)	2.2 (1-5)
Thiourea	40	6.5 (5.9-7.0)	16.5 (11.6-19.2)	15.2 (14.0-16.0)	1.7 (1.5-2.0)	7.0 (2-13)	90.0 (85-94)	0.8 (0-2)	2.2 (1-3)
Thiourea plus liver	40	7.1 (5.2-8.2)	16.8 (12.5-21.7)	14.1 (12.5-15.2)	1.7 (1.0-2.5)	28.5 (14-48)	68.4 (44-78)	1.2 (0-2)	1.8 (1-4)
Thiourea	58	6.1 (5.8-7.0)	16.9 (12.3-22.0)	14.2 (12.5-15.0)	1.8 (1.0-2.5)	5.4 (2-10)	92.8 (89-97)	0.9 (0-3)	1.1 (1-2)
Thiourea plus liver	58	7.2 (6.3-8.5)	15.4 (11.9-21.2)	14.3 (12.0-16.0)	1.8 (1.5-2.0)	32.0 (21-43)	64.5 (46-72)	1.2 (0-3)	2.3 (2-4)

All figures represent mean values. Numbers in parentheses indicate range in values.

SUMMARY

The feeding of thiourea to adult male rats results in the development of a definite neutrophilic granulocytopenia. Simultaneous administration of solubilized liver almost completely prevents this neutropenic state. On the basis of these findings and those of others [10] the use of liver or folic acid in the prevention and in the treatment of the thiourea-induced granulocytopenia is suggested.[11]

Dr. Goldsmith is also of the College of the City of New York.

This investigation was supported by a grant from the Commonwealth Fund.

From the Department of Biology, Washington Square College of Arts and Science, New York University.

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2. Franklin, A. L., and Chaikoff, I. L.: The Effect of Sulfanilamide on the Conversion in Vitro of Inorganic Iodine to Thyroxine and Diiodotyrosine by Thyroid Slices, J. Biol. Chem. **148**: 719-720 (April) 1943. Keston, A. S.; Goldsmith, E. D.; Gordon, A. S., and Charipper, H. A.: The Effect of Thiourea upon the Metabolism of Iodine by Rat Thyroid, ibid., to be published.

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6. Dr. David Klein of the Wilson Laboratories, Chicago, supplied the solubilized liver (fraction L).

7. Waisman, H. A., and Elvehjem, C. A.: The Role of Biotin and "Folic Acid" in the Nutrition of the Rhesus Monkey, J. Nutrition **26**: 361-375 (Oct.) 1943.

8. Axelrod, A. E.; Gross, P.; Bosse, M. D., and Swingle, K. F.: Treatment of Leukopenia and Granulopenia in Rats Receiving Sulfaguanidine in Purified Diets, J. Biol. Chem. **148**: 721-722 (May) 1943.

9. Daft, F. S., and Sebrell, W. H.: The Successful Treatment of Granulocytopenia and Leukopenia in Rats with Crystalline Folic Acid, Pub. Health Rep. **58**: 1542-1545 (Oct. 15) 1943.

10. Spicer, Daft, Sebrell and Ashburn.[5] Kornberg, Daft and Sebrell.[5] Waisman and Elvehjem.[7] Axelrod, Gross, Bosse and Swingle.[8]

11. Since this article was written, the following articles have been published:
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Haler, David: Thiouracil: A Warning (letters, notes, etc.), Brit. M. J. **1**: 382 (March 11) 1944.
Williams, R. H.; Weinglass, A. R.; Bissell, G. W., and Peters, Jean B.: Anatomical Effects of Thiouracil, Endocrinology **34**: 317 (May) 1944.

Council on Foods and Nutrition

THE COUNCIL HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORT. GEORGE K. ANDERSON, M.D., Secretary.

NUTRITIONAL VALUE OF WHEAT GERM AND CORN GERM

Wheat germ has attracted attention in the field of nutrition for many years. Consideration was first given to the embryo or germ part of the wheat kernel when it was found to be much richer in vitamin B_1 than the rest of the seed. Wheat germ was recognized along with yeast and rice polishings as an important source of this vitamin for both isolation work and treatment of beriberi. With increased production of patent flour and improved methods of separating the germ from the bran and middlings, wheat germ became an important commercial product. It has been estimated that 75 million pounds of wheat germ could be produced each year in the United States and Canada. Because of the high fat content of the germ some difficulty has been experienced in preserving it, but this has been eliminated to some extent by more careful manufacturing and processing and in one case by removing the fat with the production of defatted wheat germ.

In 1927 Goldberger [1] gave careful consideration to the antipellagra value of wheat germ and found it to be a good source. After the discovery of vitamin E, wheat germ and wheat germ oil were used as sources of this vitamin. Alpha tocopherol was isolated from wheat germ oil in 1936.[2] More recently there has been much interest in the quality of the protein in the embryo from cereal grains. The true nutritional value of this product can best be established by tabulation of the amount of each of the essential nutrients present. Fortunately rather extensive studies have been made during the past two years but there are undoubtedly other biologic values which still have not been evaluated. The available data on wheat germ as well as corn germ will be summarized briefly.

Grewe and LeClerc [3] reported the following values for nineteen samples analyzed in their laboratory:

Water	7.4-11.5 per cent
Protein	18.3-35.3 per cent
Ether extract	5.2-15.0 per cent
Ash	3.1- 4.9 per cent
Crude fiber	1.6- 3.5 per cent
Sugar, mostly sucrose	6.6-17.4 per cent
Other carbohydrates	19.2-53.0 per cent

Most of the additional figures found in the literature fall within these ranges. The type of wheat, its treatment before milling and the kind of milling process all influence the composition of the germ. The commercial germ obtained from soft wheat tends to be higher in nonsucrose carbohydrates than that obtained from hard wheats. Some samples may contain appreciable quantities of bran or flour, and the amount of these substances affects the composition, especially the B vitamin content. Commercial preparations intended for food are usually considerably purer than those used in animal feeding. In the case of defatted wheat germ the ether extract would be very low and therefore the percentage of protein and other water soluble ingredients would be increased.

Minerals.—Grewe and LeClerc reported the following average figures for the mineral content of composite samples of germ obtained from various classes of wheat: total ash 4.26 per cent, magnesium 0.32 per cent, calcium 0.055 per cent, potassium 0.93 per cent, phosphorus 1.05 per cent, manganese 0.020 per cent, copper 0.001 per cent, iron 0.0058 per cent, chlorine 0.082 per cent, sulfur 0.23 per cent. Zinc and aluminum are also present in minute amounts. Andrews and Bailey [4] reported a total phosphorus content of 1.24 per cent with the following distribution: phytin phosphorus 47.9 per cent, lipid phosphorus 5.7 per cent and undetermined phosphorus 46.4 per cent of the total.

Protein.—Boas-Fixsen and Jackson [5] and Chick and her associates [6] found wheat embryo protein to be about equal to whole wheat and yellow maize proteins and slightly superior to the proteins of the wheat endosperm. Later work by Chick showed that wheat germ protein can effectively supplement the wheat gluten protein. Hove and Harrel [7] have recently reinvestigated the problem using the rat growth method of Osborne, Mendel and Terry [8] whereby the test food is added to a ration which is complete in everything but protein and the biologic value is calculated as the ratio of the body weight gain to the amount of protein ingested during the experimental period. By this method, wheat germ protein was found to be about equal to the protein of skim milk and boiled egg white. Furthermore, the wheat germ protein and casein were found to be equally effective in supplementing poor protein diets. Thus it has been fairly well established that wheat germ is an excellent protein source which should not be neglected.

B Complex.—The following values for B vitamins in wheat germ appear in the literature:

	Mg. per 100 Gm.	
	Range	Typical Figure
Thiamine	1.9-4.7	3.0
Riboflavin	0.5-1.2	0.7
Niacin	3.4-6.9	6.0
Pyridoxine	0.9-1.5	
Pantothenic acid	1.5-3.5	
Biotin	0.045	
Inositol	250	
Choline	410	
Paraaminobenzoic acid	0.10	

The main reason for the variation is probably related to the presence of bran and flour. The work of Barton-Wright,[9] of Hinton [10] and of Andrews [11] has shown that of the embryo, bran and flour constituents of "wheat germ" the bran is richest in niacin. The aleurone and scutellum tissue associated with the germ contains the most thiamine, while the pure germ itself is richest in riboflavin and is therefore an excellent source of thiamine and riboflavin and furnishes considerable amounts of the other B vitamins as well.

CORN GERM

The following figures have been given for defatted corn germ: protein 20-24.5 per cent, fat 2.0 per cent, ash 9.6 per cent and moisture 8 per cent. More than half the ash is phosphorus, and the iron content (0.03 per cent) is considerably higher than that in wheat germ. Mitchell and Beadles [12] have studied the protein and report that it is 85 per cent as digestible as that of beef round and its biologic value for the growing rat is as high as that of beef round. They also report figures of 4.18 per cent crude fiber, 6.9 per cent water, 21.2 per cent crude protein and 2.56 mg. of thiamine per hundred grams in the sample they studied. The VioBin Corporation reports the following values for B vitamins in corn germ:

	Mg. per 100 Gm.
Thiamine	2.5-3.5
Riboflavin	0.6
Niacin	4.5
Pantothenic acid	1.4

Conner and Straub [13] have reported similar figures for thiamine and riboflavin, while Strong (unpublished data) has checked the foregoing figures for niacin, riboflavin and pantothenic acid.

SUMMARY

Wheat and corn germs are a good source of high quality protein. The thiamine content is about three times as high as whole grain cereals, and one fourth to one fifth as rich as average

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13. Conner, R. T., and Straub, G. J.: The Thiamine and Riboflavin Contents of Wheat and Corn, Cereal Chem. **18**: 671 (Sept.) 1941.

brewers' yeast. The riboflavin content of grains is largely concentrated in the germ and the actual amount is about equal to that of dried whole eggs, about one half of that of dried milk and about one third of that of whole liver. Wheat and corn germs cannot be considered rich sources of niacin. The amount of niacin in wheat germ is equal to that in the whole kernel, and the amount in corn germ is somewhat higher than the whole corn kernel, since corn is lower in niacin than wheat. The germ is also a relatively good source of pyridoxine and pantothenic acid and other members of the B complex. While wheat and corn germ are not exceptionally rich in any of the B vitamins, they may be regarded as good natural sources of these factors and may be used effectively either directly or as supplements to other less nutritious foods in the human diet.

Council on Physical Medicine

THE COUNCIL ON PHYSICAL MEDICINE HAS AUTHORIZED PUBLICATION OF THE FOLLOWING REPORTS. THIS COUNCIL WAS FORMERLY KNOWN AS THE COUNCIL ON PHYSICAL THERAPY.

HOWARD A. CARTER, Secretary.

WESTERN ELECTRIC TELEPHONE TYPE AUDIPHONE, MODEL J-1 ACCEPTABLE

Manufacturer: Western Electric Company, Inc., 120 Broadway, New York 5.

This is a carbon type hearing aid with a transmitter, a mechanical amplifier and a magnetic receiver. Two receivers were furnished for exmination, the #714B and 714C types. The amplifier and sound pick-up work on the principle of a telephone transmitter. The device was investigated by the Council and the results are as follows:

Weights and overall dimensions of the various parts:

Transmitter, 3 inches by ⅞ inch (circular in shape).

Receiver ⅞ inch in diameter.

Amplifier 1⅞ inches by 1 inch by 1⅛ inches.

Weight of transmitter, receiver and amplifier 6 ounces.

Battery weighs 9 ounces.

Total weight of instrument 15 ounces.

Battery.—Voltages and current drains are as follows:

Audiphone Battery GB-145, 4½ volts.

Current drain at ¼ volume 30 milliamperes.

Current drain at ½ volume 40 milliamperes.

Current drain at full volume 50 milliamperes.

All required data have been furnished by the manufacturer, such as response curves, descriptive booklet and directions.

Acoustical Gain.—The physical examination was made as follows: Average of observations of two trained observers using fitted ear molds were seated 5 feet from loud speaker which delivered frequencies of pure sine wave characteristics.

Receiver	Volume Control Set at	Frequency 256	512	1,024	1,448	2,048	2,896	4,096	
714C	½	1	2	3	6	4	10	3	Decibels
714C	¾	2	3	7	8	8	11	4	Decibels
714B	½	0	0	3	5	3	10	3	Decibels
714B	¾	2	2	5	9	10	13	3	Decibels

Physical and Mechanical Features.—The instrument consists of a black plastic molded case circular in form and pleasing in appearance. No particular change has been made in the actual appearance of the instrument from that of the previously accepted model. Also as in the previous model the carbon amplifier is connected directly to its own battery source.

Performance.—In general the instrument performs as represented. The specific advantage over previous models of this type is that the microphone operates in both vertical and horizontal positions. This is a distinct improvement. The volume control operates smoothly and is effective throughout the entire range. There is a minimum of case noise and no feedback squeal with a properly fitted ear mold.

Recommendations.—It must be remembered that this is a carbon instrument of the so-called "telephone type" and therefore cannot be judged on the basis of present requirements for vacuum tube hearing aids. The present model is an improvement over the one originally accepted by the Council on Physical Therapy. The workmanship is first class.

Despite the fact that the overall gain is not high and that the gain for specific frequencies is also not comparable to any vacuum tube aids, the Council believes that this type of aid does serve a useful purpose. The Council on Physical Therapy voted to accept the Western Electric Telephone Type Audiphone Model J-1 for inclusion in its list of accepted devices.

OTARION HEARING AID (MODEL A-2) ACCEPTABLE

Manufacturer: Otarion, Incorporated, 448 North Wells Street, Chicago.

Model A-2 is a vacuum tube hearing aid consisting of three tubes, a transmitter, a crystal receiver and a battery unit held in a leather case. This model comes in four combinations, namely (1) red dot, maximum low frequency suppression, (2) orange dot, moderate low frequency suppression, (3) green dot, slightly low frequency suppression, and (4) black dot, no suppression. Two instruments were submitted, No. 3348, red dot, and No. 3351, black dot.

Model A-2, No. 3348 (red dot): Transmitter, 3⅜ inches by 2⅜ inches by ⅝ inch, weight 4 ounces. Receiver, crystal, ⅞ inch in diameter. Batteries, cords and receiver, weight 10 ounces. Total weight of the entire instrument, 14 ounces.

Batteries.—Voltages and current drains are as follows: A-battery, 1.5 volts; current drain at ½ volume, 57.5 milliamperes. B-battery, 45 volts; current drain at ½ volume, 1.5 milliamperes.

The instrument was examined in a laboratory acceptable to the Council. The following data are the average of observations of two trained observers using fitted ear molds seated 5 feet from loud speaker delivering frequencies of pure sine wave characteristics:

Volume Control Set at	Frequency 256	512	1,024	1,448	2,048	2,896	4,096	
½	4	5	7	16	14	10	13	Decibels
¾	8	10	14	18	19	18	23	Decibels

Model A-2, No. 3351 (black dot): Transmitter, 3⅜ inches by 2⅜ inches by ⅝ inch, weight 4 ounces. Receiver, crystal, ⅞ inch in diameter. Batteries, cords and receiver weight, 10 ounces. Total weight of the entire instrument, 14 ounces.

Batteries.—Voltages and current drains are as follows: A-battery, 1.5 volts; current drain at ½ volume, 58 milliamperes. B-battery, 45 volts; current drain at ½ volume, 1.1 milliamperes.

Acoustical Gain.—The following data are the average of observations of two trained observers using fitted ear molds seated 5 feet from loud speaker delivering frequencies of pure sine wave characteristic.

Volume Control Set at	Frequency 256	512	1,024	1,448	2,048	2,896	4,096	
½	12	14	17	20	12	9	15	Decibels
¾	21	20	24	25	20	13	20	Decibels

Physical and Mechanical Features.—The instrument consists of a small and compact black plastic case and is of smooth appearance. The on and off switch and volume control is a small button placed on the left hand side of the instrument. This operates fairly easily. The construction of the instrument is of the highest type. All electrical connections are well made, and the disposition of the parts is unusually compact. The microphone is well cushioned against any possible jarring.

Otarion Hearing Aid
Model A-2

Performance.—The instrument operates in a very satisfactory manner and performs quite as represented. There is practically no feedback squeal even at high intensities and little if any distortion at high levels. Case noise and cord noise are minimal.

The Council on Physical Therapy voted to accept the Otarion Hearing Aid, Model A-2 (four combinations), for inclusion in its list of accepted devices.

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SATURDAY, JULY 22, 1944

PHYSICAL FITNESS PROGRAM

The great victories which are being won by American troops in war zones all over the world are not being won by men who are physical weaklings or degenerate types of manhood. In this, as in previous wars, the American soldier has proved himself to be about as competent a fighter as the world can produce. He represents a selection of the best physical specimens that the nation has developed; to them have been applied the technics for physical and military training that the years have proved to be efficient. In selecting the men who now constitute our armed forces, 33,000 doctors and 10,000 dentists participated as members of various boards. Let the people remember that this service was given by these overworked and harassed physicians without any remuneration other than the satisfaction of having participated in the war effort.

As shown by the article of Colonel Leonard G. Rowntree in this issue of The Journal (page 821) the standards of physical fitness for military service have varied from time to time as the needs for manpower increased. The level of the requirements depends on the number of men needed in the military services, the urgency of the need, the size of the manpower pool and the relative need for men for military service or for industry. In the course of these studies a considerable residue of men not physically fit even for training became apparent. On page 825 is a list of the principal causes for rejection of registrants who were placed in class 4-F. Not all of those thus rejected can be made fit even by the application to the problem of everything that medicine now knows. About 35 per cent of the total were rejections for mental disease, mental deficiency, including illiteracy, and neurologic disorders. However, a deduction of about 1,500,000 men in these categories would still leave about 2,500,000 who could be benefited by the application of proper medical treatment. Many of them could be made to meet the needs of the armed forces.

The rehabilitation of those physically disabled is one problem. The creation of a state of physical fitness among young people in general is another problem. Thirteen per cent of young men entering the University of Illinois [1] could not swim at all, 64 per cent could not swim 50 yards, 3.1 per cent could not chin themselves once, 25.9 per cent could not chin themselves five times, 24.1 per cent could not jump an obstacle waist high, 50 per cent could not make the muscles of the abdomen hard enough to resist a fist pushed into the abdomen by an examiner, 79 per cent could not lift the legs from the floor twenty times when lying on the back and then do twenty sit ups in succession. Evidence of this type lends support to the charge by Colonel Rowntree that many Americans are flabby, soft, pampered and in need of conditioning. Physical fitness requires development. It is a bodily state in which the tissues have power and efficiency. The basic material of the American body is sound; it needs training.

The figures cited by Cureton for young men entering the University of Illinois are fully supported in the statements of Dr. Carl A. Wilzbach, commissioner of health of the city of Cincinnati, who reports in this issue of The Journal (page 828) on the medical and dental examinations of junior and senior high school students in Cincinnati. An inventory in the form of a health examination was made for 5,000 students. A program of correction utilizing the medical profession was established. Dental defects and disturbances of vision and hearing and particularly conditions related to the heart were given serious consideration. The results of these endeavors indicate that the returns in the way of improved health far more than repay the effort and the funds expended in a program of this kind.

Industry too is giving serious consideration in these times to the problem of physical fitness. Dr. W. P. Jacobs points the way to proper planning for physical fitness in industry in his article in this issue of The Journal (page 831). Properly he emphasizes that physical fitness is a personal and individual problem. While industrial programs of recreation and sports are built around mass action, their success is dependent on the correct diagnosis of the needs of each individual and the extent to which the individual embraces the opportunity to become fit. Particularly needed is an educational program directed along these lines.

A number of tests have been developed by medical science to determine physical fitness, particularly motor skills. In the development of such procedures Dr. J. Roswell Gallagher of Phillips Academy in Andover, Mass., and Dr. Lucien Brouha of the Hygiene Depart-

1. Cureton, T. K.: The Unfitness of Young Men in Motor Fitness, J. A. M. A. **123**: 69 (Sept. 11) 1943.

ment of Harvard University have contributed greatly (page 834). They too emphasize the desirability of a body building program for every healthy person. They point out also that a proper physical education program requires more than calisthenics. The introduction of games and competitive sports which develop endurance and which add interest to physical conditioning is an important part of the program for producing physical fitness. They too find that activities leading toward physical conditioning cannot be beneficial unless the person has been found medically fit and unless the program for physical fitness is planned to suit his needs.

In 1943 President Roosevelt created a national committee on physical fitness under the egis of the Federal Security Agency with Mr. John B. Kelly as chairman and Colonel Rowntree as vice chairman. At the invitation of this committee the Board of Trustees of the American Medical Association with the support of the House of Delegates has authorized participation of the American Medical Association on a joint committee of the American Medical Association and the National Committee on Physical Fitness to be charged with development and operating a program for improving physical fitness throughout the nation during the year beginning September 1. Such a program would include evaluation of the physical state of our young men and women and increase the activities and responsibilities of schools and colleges in physical education, also improve opportunities for gaining physical health and enlist the active support of industrial, social, religious, patriotic, professional and other groups. The members of the joint committee, meeting under the chairmanship of Colonel Leonard G. Rowntree, includes Mr. A. H. Pritzlaff, past president of the American Association of Health, Physical Education and Recreation; Mr. Arch Ward, sports editor of the Chicago *Tribune*; Dr. Hiram A. Jones, state director of physical fitness for New York; Dr. William P. Jacobs, president of Presbyterian College, Clinton, S. C.; Dr. John W. Studebaker, commissioner of the U. S. Office of Education, and, representing the American Medical Association, Dr. Roscoe L. Sensenich of the Board of Trustees; Dr. Louis A. Buie of the Mayo Clinic, Rochester, Minn.; Dr. Morris Fishbein, editor of THE JOURNAL; Major General George F. Lull, Deputy Surgeon General of the U. S. Army, and Dr. William D. Stroud of Philadelphia.

This committee held its first session in Washington on July 14, at which time plans were inaugurated which are certain to eventuate in a campaign to interest the American people in the program for physical fitness and to bring increased health and efficiency to our nation.

ETIOLOGY OF PRIMARY ATYPICAL PNEUMONIA

Eaton and his collaborators[1] have investigated the agent in sputums and lung tissues from certain cases of atypical pneumonia. With this agent they were able to produce pulmonary lesions by primary intranasal inoculation of cotton rats. Evidence is presented that this agent has been adapted to chick embryos and that it is neutralizable by serums taken during convalescence from patients with primary atypical pneumonia. The authors point out the difficulties and confusion introduced into studies of this kind by previously unrecognized latent respiratory viruses of rodents. About 370 cotton rats were inoculated intranasally with sputums from 128 persons with atypical pneumonia and with suspensions of lung tissue from 15 patients who had died of the disease. Nonbacterial lung lesions were observed in 28 per cent of the animals, an incidence over six times as great as was seen in control animals. Hamsters were inoculated with five specimens of human material which have produced lesions in cotton rats. A virus was apparently transmitted to cotton rats from 10 of 18 patients in whom the presence of cold agglutinins was demonstrated. The lung lesions in the two species of animals were similar. Continued serial passage in 9 cases resulted in the eventual establishment of an agent in the cotton rats which consistently produced lung lesions; and in 4 cases this result was repeated, starting with the original material. The agent in cotton rats which was responsible for the production of lesions in the animals of the later passages was, however, not identical with the virus in the human material. This was suspected when neutralization by convalescent human serum could not be obtained regularly, although homologous immune rabbit or cotton rat serum readily neutralized these agents. Further investigation showed that the agent most frequently obtained in the serial passages was a latent pneumonia virus present in cotton rats. Despite the presence of these contaminating agents, some evidence from reinoculation experiments suggested that the original human virus was carried for several passages in cotton rats.

A sample of bacteriologically sterile human lung tissue from a patient with atypical pneumonia and filtered broth suspensions of 4 sputums were inoculated into the amniotic sac of chick embryos. Suspensions of the lungs, trachea and amniotic membrane of chick embryos of the third to fifteenth passages of one strain consistently produced lung lesions in hamsters after intranasal inoculation, but only about 30 per cent of the cotton rats inoculated with this material developed lung lesions. The lesions resulting from inoculating with chick embryo suspensions were similar in gross and microscopic appearance to those found in animals inocu-

1. Eaton, Monroe D.; Meiklejohn, Gordon, and Van Herick, William: Studies on the Etiology of Primary Atypical Pneumonia: A Filtrable Agent Transmissible to Cotton Rats, Hamsters and Chick Embryos, J. Exper. Med. **79**: 649 (June) 1944.

lated with human material. The experiments involving passage in chick embryos with human lung tissue were successfully repeated. In 2 cases the virus was successfully adapted from sputum to the chick embryos and carried in serial passages.

The virus isolated from cases of atypical pneumonia is apparently not a member of the psittacosis-lymphogranuloma group, as demonstrated by the failure to infect mice by the intranasal route, the consistent absence of characteristic elementary bodies in impression smears of infected lung or chick embryo tissues, differences in gross and microscopic pathologic conditions and lack of antigenic relationships. The virus described seems to be propagated more readily by amniotic inoculation into chick embryos than by intranasal passage in animals. Evidence of infection of the chick embryo is based on the demonstration of small to moderate size lung lesions in cotton rats and hamsters inoculated intranasally, and neutralization by convalescent serum was indicated by inhibition of these lesions.

The question as to what proportion of all cases of primary atypical pneumonia is caused by the virus described has not been answered. This can probably be done by neutralization tests in a large series of cases.

Current Comment

NEW AND NONOFFICIAL REMEDIES NOW AVAILABLE

The 1944 edition of New and Nonofficial Remedies is now available. Each chapter has been revised to bring to the reader the present consensus of actions, uses and dosage of the preparations included. Included in this new edition are chapters on allergenic preparations, analgesics and antipyretics, anesthetics, antiinfective agents, autonomic drugs, cardiovascular agents, central nervous system stimulants, diagnostic aids, diuretics, hormones, sedatives and hypnotics, serums and vaccines and vitamins. Of the remaining chapters one promises to be of increasing importance: it is concerned with the actions and uses of contraceptive preparations. This section is a new addition to the book. Another addition of great practical importance is a list of tables of approximate equivalents of doses, apothecaries' and metric systems. The latest edition of New and Nonofficial Remedies adequately supports one of the functions of the Council on Pharmacy and Chemistry: "to advise the medical profession concerning the status of medicinal articles." A companion volume that is also available is the Council's Annual Reprint of Council Reports, which contains reports on articles declared unacceptable for inclusion in N. N. R. during 1943, articles omitted from N. N. R. and nineteen reports of general educational nature. For example, one may find extensive reports on the history of the use of the apothecary and metric systems, nomenclature and identification of endocrine preparations now on the market, use of estrogens in the treatment of prostatic cancer, use of cod liver oil preparations on the skin, status of xanthine compounds, local use of sulfonamides in dermatology, treatment of Trichomonas vaginitis, and conception control. Truly, these books represent a fitting printed record of the Council's unselfish efforts to promote rational therapeutics.

EVAPORATED MILK

Over a year ago [1] THE JOURNAL called attention to the need for assistance from the medical profession in securing proper utilization of the available supply of evaporated milk. Now it is necessary to urge physicians again to avoid prescribing evaporated milk by named brands. A severe shortage in supplies of evaporated milk has again developed in certain parts of the United States, chiefly along the eastern seaboard south of Pennsylvania. Probably the supply for the country as a whole for 1944 and 1945 will be somewhat decreased. Plans are being made to assure the needs of infants by instituting new rationing procedure. In addition, the support of the medical profession is needed if the babies are to get what they require. Not all brands of evaporated milk can be made continuously available in all the localities. The Subcommittee on Medical Food Requirements of the Committee on Drugs and Medical Supplies of the National Research Council considered this problem at a meeting on March 29, adopting the following resolution:

> All brands of evaporated milk, whether or not irradiated, meeting the requirements of the Food and Drug Administration, are of sufficiently uniform composition to be used interchangeably for the feeding of infants and children. However, consideration should be given to whether or not the milk is irradiated or fortified with vitamin D and the extent of such fortification. It is further recommended that distribution should be facilitated by all means available.

A recent survey was made of all types of distribution of evaporated milk in a number of cities as well as among independent grocers in rural areas of the section of the country most affected by the present shortage. In many cases the shortage proved to be not a shortage of evaporated milk but a shortage of certain favorite brands. Less well known brands were available but not moving. A typical complaint from a mother in North Carolina stated "I have a baby 3 months old who has been taking X brand milk since he was born. My physician strongly advises against changing to any other brand. I now find that it is increasingly difficult and almost impossible to obtain it. . . ." Physicians can do a real service to their patients and their country by explaining to mothers that all brands of evaporated milk must meet federal standards effective since July 17, 1940 and enforced by the Food and Drug Administration. If the favorite or accustomed brand is not available, satisfactory results can be expected from the use of less familiar brands, provided consideration is given to whether the milk selected is irradiated or fortified with vitamin D. If the milk selected is not so fortified, supplementation of the diet or formula with this vitamin can be provided separately.

1. Evaporated Milk, Current Comment, J. A. M. A. **121**: 764 (March 6) 1943.

MEDICINE AND THE WAR

ARMY

FLIGHT SURGEONS IN BURMA

A specially organized unit of five flight surgeons and eight enlisted technicians made military medical history in Burma's jungle wilds by bringing hospital type care almost into the front lines. This unit, aided by five other enlisted men, ran what amounted to a small hospital, operated first aid stations in the field and participated in all air borne expeditions. Major Robert C. Page, command surgeon of the unit, returned to the United States recently and told the story of the medical chapters in the adventures of Col. Philip Cochran's first air commando force in Burma. He and his staff established "sick inn" in a tea planter's cottage at the air commando base in Assam not far from the Japanese lines and more than 200 miles from the nearest army general hospital. "Sick inn," set down by air freight in an area which had no rail or motor roads, had 36 beds with white sheets and most modern hospital conveniences, such as electric refrigeration and washing machines. But it was not a hospital by military definition. Neither was it a dispensary. It had too small a staff for a station hospital and too much laboratory and medical apparatus for a dispensary. Major Page stated that "military necessity was final authority for everything we did. This was the first time an air force had been called on to transport, supply, defend and act as sole communications channel for a ground force operating far behind the enemy's front. There was no table of organization for this pioneer operation and we all improvised."

After being assigned by the Air Surgeon's Office to fulfil a request from the commanding general, AAF, for five flight surgeons with highly professional qualifications, the ability to fly an airplane and a desire for combat duty, Major Page, himself a specialist in internal medicine, selected Capt. Peter A. Reierson, Moscow, Idaho, specialist in surgery and a pilot; Capt. Weldon C. Murphy, Amarillo, Texas, eye, ear, nose and throat specialist and a pilot; Capt. Donald C. Tulloch, Ogdensburg, N. Y., general practitioner and a pilot, and Capt. Cortez F. Enloe, Manhassett County, Long Island, N. Y., trained in psychiatry and medical administration. The enlisted men were picked for ability to do at least two medical department jobs in addition to the one to which they were formally assigned. They were responsible for turning a rundown cottage into a mosquito proof, spotless and comfortable sick bay complete with a victory garden.

In addition to the officers flying cargo, bomber and pursuit aircraft and gliders, the air commando force also had a group of sergeants who held pilot's ratings. These "flying sergeants" were the pilots of the L-1s and L-5s, the "grasshoppers" or "flying jeeps" of the AAF. These airplanes, together with the Fox Moths of the British Rescue Service, were responsible for the bulk of air evacuation of Chindits from Jap territory.

During the period Major Page had an opportunity to observe this operation in Burma, more than 2,000 casualties were evacuated. He states that "these little planes can carry one litter or a litter and a sitter patient, and the things the flying sergeants have done with them are incredible. Sometimes they would evacuate casualties from one end of a flying field while the Japs held the other end, actually flying over the heads of the enemy to escape. In one case 40 wounded men lay in a jungle clearing surrounded on three sides by Japs. Soon the tiny airplanes came hopping over the tree tops. They turned and glided swiftly into the clearing, two at a time. Under fire, each loaded a stretcher case and 2 wounded men who could walk and in a few minutes took off again for their base. They kept coming in until they had pulled out every one of the 40 from under the Jap's noses."

This method of front line air evacuation was originated in this theater of operations by the British, but it was not brought up to full potentialities until the arrival of the air commandos.

ARMY GRADUATES SPECIALLY TRAINED PSYCHIATRISTS

One hundred and forty medical officers who were given special training in three schools of military neuropsychiatry in the New York area graduated July 7 and were ordered to duty in army general hospitals to aid in treatment of psychiatric cases. Most of the officers were first lieutenants who recently completed nine month internships followed by special courses at the Army Medical Field Service School, Carlisle Barracks, Pennsylvania, and in general hospitals throughout the country, after which they entered the schools of military neuropsychiatry for three months' intensive study. Classes were conducted at the Mason General Hospital, Brentwood, L. I., the Columbia University College of Physicians and Surgeons, and Bellevue Hospital of New York University under the direction of leading psychiatrists and neurologists in civil and military life. One feature of the training schedule was observation by student officers of psychiatric examining procedures in operation at the New York City induction station. Medical officers returning from overseas and leading psychiatrists in civilian practice served as special lecturers.

Col. William C. Porter is director of the school at the Mason General Hospital. His assistants are Lieut. Col. Ralph T. Collins, Albany, N. Y., who had extensive service in Italy; Lieut. Col. Baldwin Keyes, Philadelphia, former professor of psychiatry at Jefferson Medical College, Philadelphia, who has seen service in Africa; Major William Dunn, New York, who served in the South Pacific, and Major James O'Leary, a neurologist, St. Louis.

The two schools in New York were under the general supervision of Capt. Norman Reider, Los Angeles. The course at Columbia University was under the direction of Dr. Nolin D. C. Lewis, director of the New York Psychiatry Institute and Dr. Tracy Putnam, director of the New York Neurological Institute. Dr. S. Bernard Wortis, professor of psychiatry at New York University and chief psychiatrist at Bellevue Hospital, was director of the school there.

REHABILITATION CENTER FOR BLIND

A rehabilitation center where blinded veterans of all branches of the service will receive extensive training to fit them for successful civilian lives recently opened at a former boys' school at Avon, Conn. All blinded servicemen will be sent to the center after they have received maximum benefit from medical and surgical treatment in service hospitals. The new installation, which was leased from the Avon school, will be known as the Old Farm Convalescent Hospital and is under command of Col. Frederic Thorne. The purpose of the center is to provide additional training for the blind in personal and social adjustment. They will be given extensive prevocational training on a sampling basis to determine as far as possible those occupational fields in which they will have the best chance of success after discharge from the service. The center maintains a staff of about 100 specially trained civilian and military supervisors, including vocational advisers and occupational therapists. It is planned to increase the size of the staff proportionally in the event of an increase in the number of blind casualties. To date there are 185 blind casualties from all branches of the service. Not all of these suffered blindness in combat.

Instruction will be given in such different kinds of work as stenography, typing, filing, general clerical tasks, metal and wood working, operation of small concession-type stores, and specialized farm jobs. Whenever possible, arrangements will be made to provide facilities for special studies in which patients may be interested. A staff of blind instructors has been selected to assist in helping patients reconcile themselves to their handicaps and overcome them. These instructors will conduct classes

and personal interviews and will teach the men reading, writing and typing by the braille method. On completion of a patient's social adjustment training, the Veterans Administration will arrange for any additional training he will require to fit him for a job, will help him find a job and maintain contact with his employer in seeing that he makes satisfactory progress.

THIRTY-NINE ENLISTED WACS BECOME COMMISSIONED PHYSICAL THERAPY AIDES

Thirty-nine enlisted members of the Women's Army Corps recently completed physical therapy training of almost a year's duration and were formally commissioned second lieutenants in the Medical Department of the Army. In nine army hospitals located in various sections of the country, these former Wacs were ushered into their official status with varying ceremonies. Strength of the physical therapy organization is less than a thousand aides at present, but an active recruiting effort is being made to increase this number. Major Emma Vogel, director of physical therapy aides, Office of the Surgeon General of the Army, stated that "these former enlisted Wacs are becoming officers of the Army at a time when their services are in urgent demand throughout the world.

"The initial thirty-nine have done an outstanding job. Our training program has been so popular with them that additional courses have been provided. It is now possible for civilian women who meet all the requirements, to enlist in the Women's Army Corps for the express purpose of taking this training.

"Casualty accounts from our overseas engagements are potent evidence of the need for physical therapists. These women have the opportunity of treating our wounded soldiers returned from those battle fronts and of experiencing the deep spiritual satisfaction that comes from aiding a patient to overcome his disability."

ONE HUNDRED NEW HOSPITAL CARS UNDER CONSTRUCTION FOR THE ARMY

One hundred new "unit type" hospital cars are being built for the Transportation Corps, Army Service Forces, by the American Car and Foundry Company, the War Department announced recently, to facilitate the War Department's plan for progressive evacuation of wounded. The cars will be placed in service starting in September, before invasion casualties in large numbers reach the United States. At the same time, all of the 120 ward cars and ward dressing cars in the Army's possession are being converted to unit cars as quickly as this can be done without interfering with the movement of casualties. The principal reason for the conversion is to add a cooking range to each car. En route to junction points where hospital trains are broken up, medical dining cars, of which the army has forty, will continue to be used to feed the wounded. After the trains are broken up, the kitchens in the unit type cars will be used, thus eliminating delays occasioned when sections of hospital trains have had to await the arrival of railroad dining car facilities.

Authorization of the new cars is in keeping with the War Department's policy to get the wounded to army hospitals as near to their homes as is consistent with availability of beds and facilities for specialized treatment.

WOMEN MEDICAL AND SURGICAL TECHNICIANS NEEDED BY ARMY

Women Medical and Surgical Technicians are needed by the Medical Department of the Army. According to a plan just announced, women who are high school graduates and who have completed at least six months' training in a school of nursing or who have a certificate of graduation from a Red Cross Nurses Aide course will be enlisted in the Woman's Army Corps. After the completion of basic training women will be given additional medical and surgical technical training at Camp Atterbury, Indiana.

ARMY AWARDS AND COMMENDATIONS

Major Sam Gendel

The Legion of Merit Award was recently presented to Major Sam Gendel at Torney General Hospital, Palm Springs, Calif., where he is now chief of the general surgery section. The decoration was awarded by the commanding general of the United States forces in the South Pacific for "exceptionally meritorious conduct in the performance of outstanding service while operating a hospital in the South Pacific area." Dr. Gendel graduated from the University of California Medical School, San Francisco, in 1935 and entered the service in 1940. In 1942 Dr. Gendel established a field hospital on a South Pacific Island with only partially trained personnel to erect buildings, install equipment and act as nurses and technicians. He served with conspicuous success for fifteen months at this post, where his initiative, energy, sound judgment and personal example not only inspired the hospital personnel but contributed to the morale of the entire force. He gave freely of his time in treating the sick among the native population, thereby cultivating friendly relationships which were of great benefit to the force which he served.

Captain Archibald M. Adams

Capt. Archibald M. Adams, formerly of Lima, Ohio, was recently awarded the Soldier's Medal in Italy for exceptional heroism over and beyond the call of duty. The citation reads "For heroism at great risk of his own life on observing an Allied fighter aircraft crash and burst into flames, Flight Surgeon Capt. Archibald M. Adams rushed to the scene and, heedless of intense heat, exploding ammunition and imminent danger of the aircraft exploding, made his way to the cockpit, freed the unconscious pilot and carried him to safety. By his courage and heroism in risking his life to save the life of another, this man has reflected great credit on himself and the Armed Forces of the United States of America." Dr. Adams graduated from the University of Cincinnati College of Medicine in 1934 and entered the service in May 1942.

Major E. Aaron Pushkin

Major E. Aaron Pushkin, formerly of West Hempstead, N. Y., was recently awarded the Soldier's Medal. The citation accompanying the award stated that "On Feb. 8, 1944 near Auburntown, Tenn., an army truck overturned in a ditch by the roadside, pinning ten soldiers under it. There was great danger that the water flowing through the ditch would cause the vehicle to sink into the mud and kill all of them. Voluntarily and at the risk of his life he crawled under the truck, administered morphine to a number of the men and assisted in their removal." Dr. Pushkin graduated from the medical College of Virginia, Richmond, in 1937 and entered the service Sept. 26, 1940.

Captain Arthur Shainhouse

The Silver Star was awarded to Capt. Arthur Shainhouse, formerly of Brooklyn and now stationed in Italy, on June 10. The citation accompanying the award read "Capt. Arthur Shainhouse, medics, Brooklyn, led aid men on two occasions forward under heavy fire to the assistance of another organization. He gave medical attention to all wounded and made sure they were evacuated before returning to his aid station. Many lives were saved by his actions." Dr. Shainhouse graduated from Dalhousie University Faculty of Medicine, Halifax, Nova Scotia, in 1941 and entered the service July 27, 1942.

Captain Charles B. Skinner

Posthumous award of the Soldier's Medal has been made to Capt. Charles B. Skinner, formerly of New York. The citation read "During a training demonstration March 23, 1944 a soldier fell into the torrent of an icy mountain river in Blackwater Canyon near Davis, W. Va. Captain Skinner, with utter disregard for his own safety, lost his life in attempting to rescue the soldier from the turbulent waters." Dr. Skinner graduated from Columbia University College of Physicians and Surgeons, New York, in 1941 and entered the service Aug. 17, 1942.

MISCELLANEOUS

REORGANIZATION OF THE COMMITTEE ON MEDICAL RESEARCH

Dr. Chester S. Keefer has been appointed Medical Administrative Officer of the Committee on Medical Research, and several divisions and a records section have been established. The titles of the divisions and the names of their heads are indicated. Dr. Keefer, the chiefs of the newly established divisions and the head of the records section have been assured that the entire organization of the Office of Scientific Research and Development stands ready to aid them and that every possible assistance will be extended to them in the conduct of their affairs.

Medical Administrative Officer: Dr. C. S. Keefer, 2101 Constiution Avenue N.W., Washington, D. C.
Division of Medicine: Dr. E. Cowles Andrus, chief, 2101 Constitution Avenue N.W., Washington, D. C.
Division of Surgery: Dr. John S. Lockwood, Chief, University of Pennsylvania Medical School, Philadelphia.
Division of Aviation Medicine: Dr. Detlev W. Bronk, chief, Johnson Foundation, Maloney Clinic Building, 36th and Spruce streets, Philadelphia.
Division of Physiology: Dr. J. T. Wearn, chief, 2101 Constitution Avenue N.W., Washington, D. C.
Division of Chemistry: Dr. M. C. Winternitz, chief, Yale University Medical School, 333 Cedar Street, New Haven, Conn.
Records Section: Dr. K. B. Turner, chief, 630 West 168th Street, New York.
Director: V. Bush.

HOSPITAL SHIPS FOR CONVOYS

Floating hospitals will soon be going to sea as part of America's regular convoy escorts. Recent Navy trial runs of the PCE (R) 853 (patrol craft escort, rescue) were made in Lake Michigan. The vessels contain bunks for 57 men and have complete hospital facilities, including a doctor, operating table, dispensary and x-ray machines and are being built by the Pullman-Standard Car Manufacturing Company, Chicago. The vessels will save many men the ordeal of long hours at sea without adequate medical attention. Like other PCE craft, these rescue ships are manned by 7 officers and 100 men. In addition to their rescue work these craft make excellent vessels for following up landing craft in invasions.

MEDICAL AID MAN AWARDED SILVER STAR

Pfc. Russell L. Horn, formerly of McKinney, Texas, and now a medical aid man attached to a field artillery observation battalion, has been awarded the Silver Star for gallantry in action and for his courage under fire. The action that brought the award occurred in Italy in January. Although the enemy was firing a sustained barrage, Private Horn dressed the wounds of his injured comrades and directed their evacuation. He refused to accept medical aid for himself and leave the area until he had made certain that all other injured had been rescued.

REHABILITATION CENTERS FOR U. S. MERCHANT MARINES

The Office of War Information recently announced that more rapid certification of disabled seamen and officers of the U. S. Merchant Marine to vocational rehabilitation centers has been arranged by the War Shipping Administration. Disabled men who received their disability in line of duty may receive surgical and medical treatment, hospitalization, therapeutic treatment, artificial appliances, vocational guidance and training, maintenance during training and placement at federal expense. Speeding up of the procedure by which disabled seamen obtain rehabilitation benefits was made possible through the Service Division of WSA. Applications are processed by the Service Division and forwarded to the Federal Security Agency. Qualified seamen and officers are then certified by FSA to the man's home state for vocational training and rehabilitation.

Delay previously encountered by a seaman in establishing eligibility for vocational rehabilitation has been eliminated. The new procedure makes possible the rapid check of a man's record through offices of WSA and the U. S. Maritime Commission. An amendment to the rehabilitation law provided federal funds for vocational rehabilitation training of certain civilians, including seamen and officers of the United States Merchant Marine who proved they were disabled and handicapped in line of duty. WSA officials expect at least 5,000 seamen to apply for certification for vocation rehabilitation within the next few months.

PUBLIC HEALTH UNDER HITLER

L'Action francaise of March 10, 1944 (France) states that though it is difficult to draw up statistics on abortions the figure for the whole country is probably 1,000,000, compared with the 500,000 claimed by overoptimistic sociologists. Among the best means of fighting abortion, apart from legislative measures, there is antepartum allowance, which has already been introduced by private initiative in three factories. In the first factory the number of births rose from two during the twelve months preceding the introduction of antepartum allowances to eight during the twelve months following, in the second factory from five to eight and in the third from four to eight. During the same period the ration of the number of births in these factories to the total number of births in the communes where the factories were situated rose from 1.3, 8 and 17 per cent to 8, 17.5 and 50 per cent respectively. Considering these remarkable results, the social committees should endeavor to obtain an extension of the antepartum allowance scheme to all industrial and commercial undertakings without delay.

Vichy Home Service, March 23 (France), broadcast part of a press interview granted by Dr. Ghasset on the question of converting certain watering places into cités sanitaires, as proposed by him at the last council of ministers. "Not only has the war prevented us building new hospitals; it has destroyed some of those we already had. The evacuation of the coastal districts has also reduced the possibility of opening new ones. We now lack 38,000 beds of the 150,000 we had before. Further, a certain number of hospitals have had to be evacuated from threatened towns. We have now to cope with the problem of providing hospital accommodation for from 2,000 to 3,000 sick people. The solution the Council of Ministers has adopted consists in equipping two or three small spas which are well situated and have been carefully selected. Since the war, hydromineral spas have been carrying on on a reduced scale; but the accommodation is there and we can therefore put up sick people who have been evacuated. The powers which I have been given by the Council of Ministers have enabled me to envisage with less anxiety the evacuation of certain hospitals situated in the threatened districts."

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

(Continuation of list in THE JOURNAL, July 15, page 795)

MICHIGAN

St. Lawrence Hospital, Lansing. Capacity, 230; admissions, 6,897. Sister M. Assisium, Superintendent (interns).

NEW HAMPSHIRE

Sacred Heart Hospital, Manchester. Capacity, 163; admissions, 2,561. Sister M. Bernardus, R.N., Superintendent (mixed residencies).

NEW JERSEY

Muhlenberg Hospital, Plainfield. Capacity, 330; admissions, 6,136. Mr. John R. Howard Jr., Superintendent (interns, July 1, 1945).

VIRGINIA

DePaul Hospital, Norfolk. Capacity, 245; admissions, 7,512. Sister Inez, R.N., Administrator (2 interns, October 1).

WISCONSIN

St. Mary's Hospital, Madison. Capacity, 225; admissions, 7,065. Sister M. Bernadette, R.N., Superintendent (interns).

ORGANIZATION SECTION

WASHINGTON LETTER

(From a Special Correspondent)

July 17, 1944.

The Cumulative Shortage of Physicians

Cognizance of THE JOURNAL'S warning of a cumulative shortage of 2,000 physicians a year in the United States, unless nondeferment policies of National Selective Service and the armed forces are changed, was taken at the Senate Subcommittee on Wartime Health and Education, presided over by Senator Claude Pepper, chairman.

Dr. Alan Gregg, director of the Medical Services Division of the Rockefeller Foundation, said "The time is rapidly approaching, if it is not already here, when, in order to produce 50 to 100 students even approximately adequate in their preparation, many medical schools will stand in serious need of their teachers now in military service; these men should be called back and assigned to duty in training the young military men now in the medical schools."

National danger inherent in a shortage of physicians in coming months and in the postwar period was brought to attention of the witnesses at the hearing through widespread publicity given American Medical Association views on the subject. Washington papers as well as the press of the country gave considerable display to THE JOURNAL editorial which warned of a tremendous number of reductions in graduates after the war unless an adjustment is made.

Emphasis was given to the seriousness of the situation by deans of the District of Columbia medical schools in press interviews, while the hearing on wartime health and education was in progress. They viewed with concern President Roosevelt's acceptance of the Selective Service order banning draft deferment of premedical students beyond July 1. "If deferment is refused of all except the young men now enrolled in medical and dental schools," said Rev. David V. McCauley, S.J., regent of Georgetown University Medical School, "it will be manifestly impossible in and after 1948 to fill even those vacancies in the professional ranks caused annually by death. . . ."

"The postwar period will reflect the loss for years," said Dr. John W. Lawlah, dean of the Harvard Medical School. He went on to say that medical schools had been led to believe that there is an acute shortage of medical men because of the number of Army requests for doctors to be commissioned. It is as important to the total effort, he stated, to train a man as a doctor as to train him to hold a gun. "All the deans feel that this action will make it difficult to recruit sufficient students for training," he said.

The ban will require medical schools to lower the "very high standard" they have tried to maintain, said Dr. Edward G. Reinhard, head of the Biology Department of Catholic University. This university, he pointed out, had lowered premedical requirements from four years of study to less than two.

"A deep concern," over the action taken, was expressed by Dr. Walter A. Bloedorn, dean of George Washington University Medical School.

The three day hearing on wartime health and education was keynoted by Senator Pepper's statement that "it is a national tragedy that five million of our young men are unfit for military service at a time when manpower needs of the nation are so critical."

Selective Service is aware of the prevailing need of doctors, Col. Leonard G. Rowntree, chief of its Medical Division, revealed in his testimony. He called the necessary rejection by the armed services of men for combat service a "national disgrace," showing youth of the country to be flabby and soft. He said "Instead of a country of rugged, virile men, we have a lot of 5-D's, defective, disabled, deficient, disordered and diseased." In examination of one tenth of the population for military service, Colonel Rowntree said, "those examinations reveal that the country is ailing and that its youth is flabby and soft. It should have medical attention."

Gen. Lewis B. Hershey, director of Selective Service, testified that many fathers had to be taken into the armed forces because Selective Service had scraped the bottom of the barrel of physically fit single men and married men without children.

Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, suggested a better distribution of hospitals and health centers in the postwar period, pointing out that 1,200 U. S. counties with a population over 15,000 persons have no recognized hospital facilities. He estimated that 419,400 new and replacement beds are needed. His plan for future public health facilities called for erection of "base" hospitals with teaching facilities, centrally located in each state, surrounded by "district" hospitals in smaller, urban areas, and many "health centers" in rural areas. Constant ambulance service would be available for removal of serious cases from health centers to district or base hospitals.

In this vein Vice Admiral Ross T. McIntire, Surgeon General of the Navy, advocated clinics under the direction of the U. S. Public Health Service in each community with diagnostic facilities available for all citizens.

To the U. S. Public Health Service Paul V. McNutt, federal security administrator and chairman of the War Manpower Commission, gave credit for preventing epidemics during this war by scrupulous care in rat proofing and fumigating incoming ships and planes.

Planning for hospitals and medical centers was discussed by Dr. Victor Johnson, secretary of the Council on Medical Education and Hospitals of the American Medical Association, Dr. Claude Munger, chairman of the Council on Government Relations of the American Hospital Association, Dr. Vane M. Hoge, chief of the Hospital Facilities Section of the U. S. Public Health Service, and the health need of veterans by Col. W. C. Menninger, director of the Division of Neuropsychiatry, Medical Corps, U. S. Army, Brig. Gen. Frank T. Hines, administrator of the Veterans Administration and director of reemployment and retraining, Office of War Mobilization, and representatives of the American Legion, Veterans of Foreign Wars and Disabled War Veterans of America.

Members of the subcommittee are Senators Claude Pepper of Florida, chairman, James M. Tunnel of Delaware, Elbert D. Thomas of Utah, Robert M. LaFollette Jr. of Wisconsin and Kenneth S. Wherry of Nebraska.

The War Shipping Administration

One of the less publicized governmental medical departments which has done much to develop new ways of meeting specialized problems of this modern war is the medical service of the War Shipping Administration, of which Dr. Justin K. Fuller is medical director. Now the crew has the benefit of treatment from a pharmacist mate or hospital corpsman—on a cargo vessel he is known as junior assistant purser-pharmacist mate—and the crew lives "to-side amidships," in better ventilated, more comfortable, small group rooms, instead of poorly ventilated community forecastles that were damp, evil smelling and uninviting.

Dr. Fuller has found new opportunities presented through the war for safeguarding the health of merchant seamen, which of course means improved efficiency of the Merchant Marine. This is important, because on the Merchant Marine depends success of far flung battle forces depending solely on long supply lines. Outstanding development in medical service for the Merchant Marine is acceptance of merchant seamen in army and navy hospitals and dispensaries abroad, and repatriation of disabled seamen on hospital and other ships of the Army and Navy. Another significant service is provision of medical advice and social service help by officers of the Recruitment and Manning Organization of WSA and the United Seamen's Service for merchant seamen repatriates when they reach United States ports.

Maritime law requires that a medical officer be included in the crew of ships carrying more than thirty passengers, and

few ships carrying less than this number have had a doctor aboard, as a result. Until recently ships in the latter class have usually been without medical personnel. With bombing and strafing a constant hazard for the merchant ships WSA developed a hospital corps school at the Maritime Service Training Station, Sheepshead Bay, Brooklyn. The first class of 300 was graduated early in 1943, and it is expected that by the end of 1944 every merchant vessel operating under control of the agency will have a graduate of this school aboard. Other safeguards for merchant seamen include inspection of ship plans and ships under construction by Public Health Service sanitary engineers. A sanitary code laid down by the Public Health Service governs, among other things, taking on of water, elimination of cross connections in plumbing systems, disinfestation and the disposal of sewage and garbage at sea, inside harbors and when tied at docks.

Ships' personnel have found helpful the new centralized supervision of ships' medicine chests and uniform provision of necessary medical supplies and equipment, including dried plasma, DDT powder and penicillin. Medical standards for enrolment have been determined with great care, which is said to have been reflected in a higher physical caliber of the 50,000 odd trainees graduated from training stations and ships of the Maritime Service. Annual as well as "sign on" medical examinations are required.

Rehabilitation of disabled seamen is a part of the WSA medical problem. Seamen unable to return to sea are referred to the Federal Security Agency. Although exposed to the same risks as the armed forces, the merchant seamen is not as well protected by compensation, war risk insurance, certain medical benefits and rehabilitation. Casualties during periods of heavy shipping losses were greater than in any other group. Legislation is now under advisement aimed at correcting this situation.

Dr. Fuller is endeavoring to provide the best possible medical service for merchant seamen through the use of over-all activities of the Public Health Service, augmented by specialized facilities of the Hospital Divisions, Mental Hygiene Divisions, Venereal Division, Dental Section and Sanitary Engineering Section. His office as medical director of WSA operates as a unit of the Public Health Service out of the office of the deputy administrator for labor relations, manning, training and recruitment. Naturally, cooperation of medical services of other government and private agencies is solicited and used to the fullest extent. It is felt in responsible circles here that the program has justified itself.

WOMAN'S AUXILIARY

OFFICERS OF THE WOMAN'S AUXILIARY FOR THE COMING YEAR

Newly elected officers of the Woman's Auxiliary to the American Medical Association are as follows: Mrs. David W. Thomas, Lock Haven, Pa., president; Mrs. Jesse D. Hamer, Phoenix, Ariz., president-elect; Mrs. Eustace A. Allen, Atlanta, Ga., first vice president; Mrs. J. H. Hornberger, Roebling, N. J., second vice president; Mrs. A. H. Duemling, Fort Wayne, Ind., third vice president; Mrs. David Berg, Helena, Mont., fourth vice president; Mrs. Arthur A. Herold, Shreveport, La., constitutional secretary; Mrs. Harold F. Wahlquist, Minneapolis, treasurer.

Arizona

The Maricopa auxiliary of Arizona recently launched a drive for discarded woolen materials to be used for the Kenny treatment of poliomyelitis. Other counties were asked to help, and the plan was presented at the annual state convention, which was held in Phoenix, April 14-15.

Arkansas

Mrs. B. L. Ware was elected president of the auxiliary of the Sebastian County Medical Society of Arkansas at a luncheon meeting of the auxiliary recently. She succeeds Mrs. W. F. Rose.

The Pulaski County auxiliary held its regular meeting in March with the topic "Food and Its Importance to Good Health" as the subject of the evening. A dinner honoring the husbands was given March 31.

Colorado

The Larimer County auxiliary of Colorado has had an evening meeting and a luncheon meeting and been the guests of their medical society at a dinner. The medical society also entertained the wives of the men in service. This auxiliary has given a two years subscription to the *Reader's Digest* to the Larimer County Hospital. Dr. J. D. Carey and his daughter gave the hospital an oxygen tent and machine in memory of Mrs. Carey.

Iowa

Iowa has fifteen county auxiliaries, with a membership of 316. The Iowa auxiliary has two to four pages each month in the state medical journal, and reprints are mailed to each member. Mrs. K. M. Chapler, state chairman of press and publicity, has placed ten "doctors at war posters" in public institutions.

Michigan

The Ingham County auxiliary of Michigan held its Guest Day at the home of Mrs. L. M. Snyder recently. One hundred dollars was voted to the Red Cross. Dr. H. G. Batson spoke on "Trends in Modern Therapy." The St. Claire County auxiliary held its March meeting at the Chateau in Port Huron. Dr. J. A. Dunn spoke on "The Latest Developments in Food."

Minnesota

Kandiyohi-Swift-Meeker County Medical Auxiliary was reorganized at a meeting held recently at the home of Mrs. Richard Anderson in Willmar. There were fifteen present, and Mrs. Hans Johnson, Kerhoven, was elected president.

The Hennepin County auxiliary held an all day health institute March 3. Three hundred persons including presidents of all of Minnesota's clubs attended. Dr. Walter C. Alvarez of the Mayo Clinic spoke on "Why Women Are Nervous." A film entitled "Fight Syphilis" and another "Fighting Tuberculosis in Hennepin County" were shown. Dr. W. A. O'Brien spoke on "Tropical Diseases: A Postwar Problem." Other talks were given including a talk on the Wagner-Murray-Dingell bill.

Missouri

At a recent meeting the Missouri auxiliary elected Mrs. J. B. McCubbin of Fulton president and Mrs. Harry Gilkey of Kansas City president-elect. A breakfast honoring the past president and a luncheon were the only social events. An address was given by Dr. W. W. Bauer, Director of the Bureau of Health Education of the American Medical Association.

Ohio

At a meeting of the Woman's Auxiliary to the Toledo Academy of Medicine recently the program consisted of brief, informal talks by members whose husbands are in service; New Guinea, South Pacific, Hawaii, England, New Hebrides, Aleutians and Iran were the countries discussed.

Oklahoma

The membership report for Oklahoma is Tulsa 133 members, Oklahoma City 114 members, Ada 14 members, Shawnee 16 members and Norman 18 members.

West Virginia

West Virginia held its twentieth annual meeting May 15-16 at Wheeling. Capt. W. M. Sheppe (MC), U.S.N.R., gave an address on "Recent Advances in Medical Care of Naval Personelle." Mrs. Eben J. Carey, National president, was one of the honor guests at the luncheon.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARKANSAS

Hospital Receives Physician's Equipment. — The late Dr. Charles S. Hale, who died in March at Cisco, Texas, bequeathed all his medical and surgical equipment to St. Bernard's Hospital, Jonesboro. Newspapers May 1 reported that the hospital had already received the equipment.

CALIFORNIA

Venereal Disease Control Institute. — An institute on community control of venereal diseases opened at the University of California, Los Angeles, July 17, to continue for three weeks. The institute is in charge of Dr. Nels A. Nelson, Baltimore, deputy state health officer, bureau of communicable diseases, Maryland State Department of Health.

Personal.—Morris A. Stewart, Ph.D., associate professor of parasitology, University of California, Berkeley, is to spend three months in Bolivia with headquarters in Santa Cruz. *Science* reports that Dr. Stewart's work on parasitic diseases and means for their control will be used by the Bolivian government in its program for the economic development of the country.

Medical Missionaries Return to India.—Drs. Arthur E. Coyne, Takoma Park, Md., and Theodore R. Flaiz, Watapo, Wash., medical missionaries, will return to Surat, India, according to the *Medical Evangelist*. After his graduation at the College of Medical Evangelists, Loma Linda, in 1918, Dr. Coyne served six years in India. He later served as dean of the Los Angeles division of the college. Subsequently he has been serving in various hospital positions. Dr. Flaiz was in India from 1920 to 1932. After his graduation at the college in 1938 he served in the administrative offices in the Los Angeles division. Both physicians plan to travel with their wives to India by way of Portugal.

CONNECTICUT

Pharmaceutical Meeting. — "Does the American Public Want Prepaid Medical Care?" was the title of a paper by Dr. Creighton Barker, executive secretary, Connecticut State Medical Society, before the sixty-eighth annual meeting of the Connecticut Pharmaceutical Association, New Haven, June 22.

Memorial Issue to Dr. Trask. — The *Yale Journal of Biology and Medicine* devoted its May issue to the memory of the late Dr. James Dowling Trask, who at the time of his death in 1942 was associate professor of pediatrics at Yale University School of Medicine, New Haven.

Personal.—Dr. John S. Lockwood, acting director, Harrison department of surgical research, University of Pennsylvania School of Medicine, Philadelphia, has been named associate professor of surgery at Yale University School of Medicine, New Haven, effective July 1.——Dr. Edgar C. Yerbury has been appointed superintendent of the Connecticut State Hospital, Middletown, to succeed Dr. Roy L. Leak, who is resigning after holding the position since April 1922. —— George R. H. Nicholson, headmaster of Kingswood School, West Hartford, was elected president of the Connecticut Society for Mental Hygiene at its recent annual meeting and Dr. Paul P. Swett, Bloomfield, was chosen vice president.

FLORIDA

Dr. Rowlett Resigns from State Board.—Dr. William M. Rowlett, Tampa, secretary of the Florida State Board of Medical Examiners since 1918, has resigned, effective July 15. Dr. Rowlett, who graduated at the Atlanta College of Physicians and Surgeons in 1909, served as president of the Florida Medical Association in 1939.

Special Society Election.—Alvin P. Black, Ph.D., professor of agricultural chemistry, University of Florida, Gainesville, was recently chosen president of the Florida Public Health Association. Other officers include Drs. Wieland W. Rogers, Jacksonville, E. Lucille J. Marsh, Tallahassee, vice presidents, and Edward M. L'Engle, Jacksonville, secretary-treasurer.

GEORGIA

Personal.—Dr. Abram J. Davis, Swainsboro, has resigned as health commissioner of Emanuel County to accept a similar position in Richmond County.——Dr. Charles L. Ridley, Macon, health officer of Bibb County, has been appointed chairman of the state department of public health.

State Medical Election.—Dr. Ralph Hill Chaney, Augusta, was chosen president-elect of the Medical Association of Georgia during its recent annual meeting in Savannah, May 9-12, and Dr. Cleveland Thompson, Millen, was installed as president. Dr. Edgar D. Shanks, Atlanta, is the secretary. The 1945 annual meeting will be held May 8-11 in Macon. Dr. Arthur W. Allen, Boston, delivered the Abner Wellborn Calhoun Lecture at the meeting, May 10, on "Gastric and Duodenal Ulcers."

IDAHO

Personal.—Dr. Virgil C. Belknap, Nampa, recently completed fifty years in the practice of medicine.——Dr. Jay C. Miller, Grand Island, Neb., has been appointed director of the Kootenai County Health Unit, succeeding Dr. Herbert L. Newcombe, Coeur d'Alene, who has resigned to enter private practice. Dr. Miller will be located at Coeur d'Alene.

ILLINOIS

Changes in State Department of Health.—Dr. Alexander William Burke, Chicago, was recently named acting chief of the state division of tuberculosis control in addition to carrying on his work as director of health district number ten, consisting of five counties. He fills the vacancy that occurred when Dr. Edward K. Steinkopff resigned to become medical director of the Pinehurst Sanatorium, Janesville, Wis. Dr. Henrietta M. Herbolsheimer, Chicago, has been appointed acting chief of the state division of maternal and child hygiene. Dr. Hugo V. Hullerman, Chicago, chief of the division, resigned to become secretary of the council on professional practice of the American Hospital Association (THE JOURNAL, June 17, p. 503). Dr. George G. Taylor, Chicago, has been appointed chief of the state division of venereal disease control, effective July 1, succeeding Dr. Herman M. Soloway, Chicago, who has resigned to reenter private practice. Dr. Soloway will continue with the department on a part time basis, serving as venereal disease control officer in the division of industrial hygiene.

Chicago

Granville Bennett Appointed Head of Pathology at Illinois.—Dr. Granville A. Bennett, professor and head of the department of pathology at Tulane University of Louisiana School of Medicine, New Orleans, has been appointed to a similar position at the University of Illinois College of Medicine.

Memorial Lecture to Honor Sanford Gifford. — The Chicago Ophthalmological Society is planning to establish a memorial in honor of the late Dr. Sanford R. Gifford in the form of a lecture on an ophthalmologic subject to be delivered annually before the society. In an announcement the society states that it is hoped that many friends of Dr. Gifford will take this opportunity to contribute to this lecture fund in honor of the memory of one who made such noteworthy contributions to ophthalmology as an author, a clinician and an inspiring teacher. Contributions may be sent to Dr. William A. Mann, secretary of the Chicago Ophthalmological Society, 30 North Michigan Avenue.

IOWA

State Medical Election.—Dr. Ransom D. Bernard, Clarion, was chosen president-elect of the Iowa State Medical Society at its recent annual meeting and Dr. Maurice C. Hennessy, Council Bluffs, was installed as president. Dr. Robert L. Parker, Des Moines, is secretary. The next annual session will be held in Des Moines, April 19-20, 1945.

Narcotic Violation.—Dr. Chester F. Cashman, Hartley, pleaded guilty in the U. S. District Court at Sioux City, May 26, to a violation of the federal narcotic law. Dr. Cashman was sentenced to serve a term of imprisonment for three years. Sentence was suspended and he was placed on probation for a similar period, according to the U. S. Bureau of Narcotics.

KANSAS

Mr. Ebel Named Executive Secretary of State Society. —Mr. Oliver Ebel, Wichita, has been appointed executive secretary of the Kansas Medical Society, effective July 1. Mr. Ebel resigned a similar position with the Sedgwick County Medical Society to accept the new appointment.

MARYLAND

Conference on Cancer.—Section C of the American Association for the Advancement of Science will sponsor a conference on cancer at Gibson Island, July 31-August 4. Among the speakers will be:

July 31

Dr. Albert Claude, New York, Topography of Cell Function.
Drs. Edward W. Shrigley, Madison, Wis., and Francesc Duran-Reynals, New Haven, Conn., The Biology of Virus Induced Tumors.
Alfred Taylor, Ph.D., Austin, Texas, Virus Production of Mammalian Tumors.
William Ray Bryan, Ph.D., Bethesda, Md., and Herbert Kahler, Ph.D., Virus Studies with Newer Technics.

August 1

John J. Bittner, Ph.D., Bar Harbor, Maine, Inciting Influences in the Etiology of Mammary Cancer in Mice.
Howard B. Andervont, Sc.D., Bethesda, The Milk Factor in Breast Cancer in Mice.
Mary E. Maver, Ph.D., Washington, D. C., Serology of Tumor Cathepsins.
Dr. Jacob Furth, New York, The Site and Time of Malignant Change in Leukemia of Mice.

August 2

Frank H. J. Figge, Ph.D., Baltimore, The Relationship of Pyrrole Compounds to Carcinogenesis.
Louis F. Fieser, Ph.D., Cambridge, Mass., Discussion of Hydrocarbon Carcinogenesis.
Wilton R. Earle, Ph.D., Washington, Production of Malignancy in Vitro.
Dr. Harry S. N. Greene, New Haven, The Occurrence of Dependent and Autonomous Phases in the Developmet of Cancer.

August 3

Roger J. Williams, Ph.D., Austin, B Vitamins and Cancer.
Jesse P. Greenstein, Ph.D., Silver Spring, Enzymes and Cancer.
Dr. Harold P. Rusch and Carl A. Baumann, Ph.D., Madison, The Prevention of Experimental Liver Tumors by Dietary Means.

August 4

Heron O. Singher, The Effect of Inhibitory Agents on Normal and Malignant Tissue.
Dr. Curtis M. Flory and Dr. Furth, New York, Chemotherapeutic Studies on Leukemia.

MASSACHUSETTS

Dr. Dubos Returns to Rockefeller Foundation.—René J. Dubos, Sc.D., has resigned as George Fabyan professor of comparative pathology and tropical medicine, Harvard Medical School, Boston, to return to the Rockefeller Institute for Medical Research. Dr. Dubos resigned from his previous appointment at the institute as member on June 30, 1942 to accept the Harvard position.

MICHIGAN

Earl Burbidge Appointed Medical Director of Frederick Stearns and Company.—Dr. Earl L. Burbidge, Philadelphia, for the past three years with the medical research division of Sharp & Dohme, has been appointed medical director of Frederick Stearns and Company, Detroit, effective June 15. Dr. Burbidge graduated at the Washington University School of Medicine, St. Louis, in 1939.

Prevalence of Mosquitoes.—Six members of the U. S. Public Health Service are conducting a mosquito survey in Michigan to determine the prevalence of various mosquitoes. Adult mosquitoes and larvae from every county in Michigan will be collected and sent to the state health department headquarters in Lansing, where they will be studied by a member of the staff. *Public Health News* states that no effort will be made to cut down on the number of mosquitoes this summer but, if the study shows that they are a hazard to health in certain sections, control measures will be undertaken later.

Personal.—Dr. Leverett S. Woodworth, Detroit, was chosen president of the Michigan Hospital Association at its recent meeting in Chicago.——Dr. James R. Jeffrey Jr. has been named temporary superintendent of the Battle Creek Sanitarium, Battle Creek.——Dr. William P. Derck, Marysville, was honored at a dinner meeting of the St. Clair County Medical Society in recognition of his completion of fifty years in the practice of medicine.——Dr. Rudolph Robert Lang has resigned his commission in the U. S. Public Health Service. The *Bulletin* of the Ingham County Medical Society is reported to have said that Dr. Lang resigned because the public health service allows osteopaths to be commissioned.

MINNESOTA

Hospital Association Receives Award.—The Minnesota Hospital Association on May 14 received a plaque from the American Hospital Association for the "best hospital public education program in the nation for 1942 and 1943." Dr. Thomas E. Broadie, Ancker Hospital, St. Paul, was inducted into the presidency and Miss Dina Bremness, R.N., Glenwood Community Hospital, Glenwood, was named president-elect.

State Board Abandons Reciprocal Relations with Illinois.—The Minnesota State Board of Medical Examiners on May 12 acted to terminate reciprocal relations with the state of Illinois. According to the Minnesota board the action was the result of a refusal of the Illinois authorities to recognize a license issued by the Minnesota board to one who was the holder of a bachelor of medicine degree at the time of the examination rather than a doctor of medicine degree. It was stated that the action of the board is a mandatory provision of the Minnesota law.

License Revoked.—On May 12 the license to practice medicine of Dr. Orel Anson Kibbe was canceled by the Minnesota State Board of Medical Examiners because of his plea of guilty in the district court of Hennepin County, March 8, to a charge of performing an illegal operation. At the time he pleaded guilty Dr. Kibbe surrendered in open court his medical license and basic science certificate with a written request that they be canceled by the state board of medical examiners and the state board of examiners in the basic sciences (THE JOURNAL, June 10, p. 440).

Medical Art Show.—The Minneapolis Public Library on June 19 opened its first medical art display. Included in the exhibit are the works of a number of medical illustrators, including Russell Drake, Mayo Clinic; Jean Hirsch, head of the Medical Art Shop, University of Minnesota; Gladys McHugh, University of Chicago; Ralph Sweet, University of California Medical Center; Elizabeth Brodel of the Society of the New York Hospital; the Medical Fantasies of Daisy Stilwell, Modern Medicine, and the drawings of the late Dr. Harry B. Wilmer for his book Huber the Tuber. The exhibit includes a group of books showing the earliest examples of medical illustrations lent by the Surgeon General's Library in Washington and two Vesalius volumes, a 1783 edition by Shirley P. Miller, Ph.D., of the University of Minnesota and the 1934 edition from the library of Modern Medicine. The display also includes a group of prints from the art department of the public library. The exhibit will be open until July 20.

MISSOURI

Prepayment Medical and Surgical Care.—Medical, surgical, obstetric and fracture care of hospital patients will be included in a recently approved prepayment medical and surgical care plan of the Missouri State Medical Association. A committee was named by the association to launch the plan immediately and consists of Drs. Carl F. Vohs, St. Louis, chairman; Ira H. Lockwood, Kansas City; Marcus Pinson Neal, Columbia; Howard B. Goodrich, Hannibal, and Frank L. Feierabend, Kansas City. The new program will be known as the Missouri Medical Service, Inc., and will be operated on a straight cash indemnity basis and will not interfere with the physician's normal fee. According to the state medical journal the policy is to state that the indemnification amount will not in any way relate to the physician's fee and the amount paid will be considered by the patient as a part payment of the fee. The plan is to be available to all residents of the state, and every physician will have opportunity to cooperate.

NEW YORK

New Division of Product Development at Winthrop.—The establishment of a division of product development at Winthrop Chemical Company has been announced by Dr. Theodore G. Klumpp, president. The division, with headquarters at the company's plant at Rensselaer, will explore the postwar commercial potentialities of products now being supplied by Winthrop to the armed forces as well as new products developed in the company's laboratories.

Hospital News.—The Northern Westchester Hospital, Mount Kisco, has received $50,000 from the Reader's Digest Association for the construction and equipment of a new emergency department and board and conference rooms on the first floor of the new south wing of the hospital, which is planned under a $500,000 building program. Mr. and Mrs. Carl Tucker have subscribed more than $31,000 to build and equip a new pediatrics department to occupy the first floor of an addition on the present northeast wing of the hospital. Mr. Tucker is president of the hospital and general chairman of the campaign committee.

Dental Examinations Start in Caries-Fluorine Demonstration.—The New York State Department of Health recently began the dental examinations of school children in the city of Newburgh, which, with the city of Kingston, is collaborating in a long range demonstration to determine the practicability of mass protection against dental caries by adding fluorine to public drinking water supplies. These communities were selected as study and control areas, respectively,

after careful consideration of many sections of the state which might be suited to such a demonstration (THE JOURNAL, May 6, p. 73). Dental inspections of about 1,000 children in various age groups of 5 to 14 years will be made. The purpose is to obtain, at the outset of the demonstration, a dental caries index which will serve as a basis for comparison with the terminal figures at the end of ten years, the length of time which must elapse before the full benefits of the water treatment are realized. According to *Health News* it is also planned to make a pediatric investigation of a representative sample of the child population, including a general physical examination, urinalysis and x-ray films of the long bones and centers of ossification. Procedures for these examinations are now being prepared, and when they are completed a substantial portion of the child population will be examined. All examinations will be made before the fluoride is added to the water supply.

New York City

Floating Hospital Opens Season.—On July 3 the St. John's Guild floating hospital, the *Lloyd I. Seaman*, began its first seasonal excursion up the Hudson carrying physically handicapped children and their mothers. The excursions will continue daily except Sunday until September 2. The excursions are financed by about 330 organizations. The trained staff on the floating hospital includes two physicians and a dentist, four registered nurses and five practical nurses. Physically handicapped children and those with heart disease comprise the patients.

New Bureau of Medical Education.—The New York Academy of Medicine has created a bureau of medical education to serve all physicians interested in furthering their medical education, but particularly the physicians returning from war and the increasing number of foreign physicians who arrive in New York for postgraduate instruction and training. The bureau, organized by and operated under the supervision of the committee on medical education of the New York Academy of Medicine, will render its services without charge. It plans to publish announcements of postgraduate medical courses conducted by the universities and the hospitals of New York City. Thirty-three of the leading hospitals have been invited to collaborate in this work. A group of advisers representing the special fields of medical practice has been appointed to supervise the work of the bureau.

Changes at Long Island College of Medicine.—Dr. William Dock, professor of medicine at the University of Southern California School of Medicine, Los Angeles, has been appointed to a similar position and head of the department at the Long Island College of Medicine, Brooklyn. This is the first time in the eighty-three years history of the college that it has had a full time professor of medicine. Edward Muntwyler, Ph.D., professor of experimental biochemistry, Western Reserve University School of Medicine, Cleveland, has been appointed professor and executive officer of the department of biochemistry at Long Island and James B. Hamilton, Ph.D., associate professor of anatomy, University of Missouri School of Medicine, Columbia, professor and executive officer of the department of anatomy. These appointments fill the vacancies that occur with the retirement of Dr. Tasker Howard, professor and executive officer of the department of medicine; Edgar D. Congdon, Ph.D., professor and executive officer of the department of anatomy, and Matthew Steel, Ph.D., professor and head of the department of biochemistry. Dr. Howard has been connected with the school since 1910, Dr. Congdon since 1932 and Dr. Steel since 1914. Dr. Fred L. Moore, who for the past two years has been director of the division of public health studies of the Commonwealth Fund, has been appointed to a newly created post as professor of social and environmental medicine in the department of preventive medicine and community health at the medical school. Before joining the Commonwealth Fund, Dr. Moore had held a professorship in the department of preventive medicine and community health. In his new capacity he will also serve as medical director of the Polhemus Clinic of the Long Island College Hospital, in charge of the outpatient department of the hospital. Other changes on the faculty effective July 1 include:

Dr. Elberton J. Tiffany promoted to associate professor of the department of bacteriology.

Dr. Francis E. Mallon promoted to assistant clinical professor in the department of ophthalmology.

Drs. Charles A. Hargitt, Edwin Clifford Place and Michael J. Buonaguro newly appointed as assistant clinical professors in the department of ophthalmology.

Dr. Emanuel Mendelson promoted to clinical professor in the department of radiology.

Dr. Francis Paul Ansbro promoted to assistant clinical professor (anesthesiology) in the department of surgery.

NORTH CAROLINA

Poliomyelitis.—Serious outbreaks of infantile paralysis in western North Carolina have called out the emergency services of the National Foundation for Infantile Paralysis, which has announced it had advanced $50,000 for epidemic relief and sent a staff of doctors, nurses and physical therapy technicians into the region. There were 264 cases of poliomyelitis reported in the state through July 10. Through the National Foundation, it was announced, doctors, nurses, physical therapists and supplies and equipment were sent from many parts of the country into the affected areas. It is almost miraculous, according to Dr. Don Gudakunst, how the the people have worked in setting up emergency hospitals almost overnight. This was particularly true in Catawba County, where a score of cases were being reported daily and there were insufficient hospital facilities in the state to receive the case load. The National Foundation's state representative, Clarence H. Crabtree, immediately investigated the situation. He and Dr. A. Gaither Hahn, Catawba County chapter chairman of the National Foundation, suggested that the Lake Hickory Fresh Air Camp be converted into an emergency hospital. That same afternoon the children who were attending the camp were en route to their homes, and the camp facilities were made available. Dr. Hahn called Col. Frank Wilson at the Moore General Hospital at Black Mountain, a convalescent hospital for soldiers, who agreed to lend 40 beds. Working throughout the night Crabtree, Dr. Hahn and Dr. Harold C. Whims, local health officer, arranged for trucks to transport the beds, and carpenters were summoned to make the necessary alterations. Three days later the emergency hospital admitted its first patients. The cases continued to arrive, including one needing immediate treatment in a respirator, Dr. Gudakunst stated. Miss Beatrice Cobb, county chairman and head of the National Foundation's Women's Division in nearby Burke County, was told of the situation. Half an hour later the vitally needed respirator was in operation at the emergency hospital. Another patient required similar treatment. A call was placed to Gettys Guille, chairman of the National Foundation's Rowan County chapter, and a respirator was secured immediately. Since that time two more respirators have been sent into the area by the foundation from its Boston depot. The case load increased so rapidly that another appeal was made to Colonel Wilson for two army hospital tents. Additional beds were furnished, and electricians and carpenters worked half the night to set up the tent platforms and accessory equipment, the Nutton Bonous Lumber Company donating the lumber. The next morning 10 soldiers and 15 laborers, driven by a Wac, arrived at the camp and pitched in. The Wac promptly changed into coveralls, helped carry lumber, and aided in the construction of the tents. Dr. Gudakunst's report stated that army personnel remained at the camp a week, constructing ramps and other facilities. Meanwhile the Red Cross had recruited nurses, who were instructed in their special duties by two supervising nurses from the state health department. Kitchen and dining room plans were drawn up overnight by Q. E. Herman, a local contractor, who has earned the nickname of "kaiser" because he seems to do the impossible almost immediately. He set a crew of carpenters working day and night shifts, and four days later this part of the building was in use. Convicts from the state prison aided also. Several score helped clear the grounds and dug ditches for enlarged sewage disposal plants. The water company installed a 3 inch water main to the camp 3 miles from town and then turned over an old 1 inch line to the gas company for piping in gas. The telephone company speedily installed trunk lines and switchboard. Additional sheets were needed, and an order for fifty was placed with one store, which immediately sent one hundred without charge. The supply of children's cribs was exhausted, so carpenters built new ones as fast as they were called for. The Hickory Fire Department installed a 3 inch main overnight, stationed a chemical truck on the grounds and placed a twenty-four hour fire patrol on watch. Epidemiologists, working under research grants from the National Foundation for Infantile Paralysis, are in the stricken area searching for clues as to the manner of spread of the disease. Among the research investigators are Drs. Joseph Melnick, Robert Ward, Dorothy Horstmann, from Yale University, and Dr. Thomas Francis Jr. of the University of Michigan. Two others, Drs. Kenneth Maxcy and Howard Howe of Johns Hopkins University School of Medicine, Baltimore, will arrive shortly.

OHIO

Dr. Baker Retires as Chairman in Anatomy.—Rollo C. Baker, Ph.D., chairman on leave of the department of anatomy of the Ohio State University College of Medicine, Columbus, will retire at the close of the academic year. He will retain his position as acting dean of the college of medicine.

RHODE ISLAND

The Charles F. Gormly Fund. — At a meeting of the house of delegates of the Rhode Island Medical Society, May 18, authorization was given to the purchase of a number of books on legal medicine for the library of the society from funds designated the Charles F. Gormly Fund. Each book will carry a plate showing that it belongs to the Charles F. Gormly collection. The fund was created with the balance of money left from the commissioning of a portrait of Dr. Gormly hung in June 1943. Dr. Gormly was the immediate past president of the state medical society at the time of his death June 16, 1943. The portrait was executed to mark the years of service of Dr. Gormly to the state medical society, and the collection of books on legal medicine will serve to memorialize one of his main interests. While there is a possibility that friends of Dr. Gormly might in time contribute toward the fund to continue it, the present plans of the library committee are to purchase new books from time to time until the present fund is expended.

Department of Medical Sciences Created at Brown University. — A department of medical sciences has been created at Brown University, Providence, it was announced July 12. Drs. Charles A. McDonald and Alexander M. Burgess, associated with the division of university health for some time, have been appointed professors of health and hygiene in the new department, which hopes to perform a number of important functions within the university and in the relationships of the university to the medical profession and hospitals of the community. It was stated that the new department will assist the university in assuming a larger responsibility for the general education of its students in matters of health. It is designed in part to meet the needs and desires of recent graduates of medical schools whose postgraduate studies in certain specialized fields of medical science have been interrupted by war service. The announcement stated that the university plans to cooperate in the development of programs of postgraduate study and research for members of the resident staffs of the hospitals of the community.

WEST VIRGINIA

Society Offers Free Service in Care of Tornado Patients.—At a meeting in Clarksburg on July 7 the Harrison County Medical Society unanimously agreed that no charge is to be made for services rendered by members in connection with the tornado which swept through the Shinnston area on June 23, leaving a death total of 70 from that community alone and sending many injured persons to the hospitals. Members of the medical society waived not only fees for services at the time of the disaster but also fees for medical and surgical care that may be necessary until the injured have recovered. The society is composed of 85 physicians, 20 of whom are serving in the armed forces.

GENERAL

Basil O'Connor Head of Red Cross.—On July 13 President Roosevelt appointed Mr. Basil O'Connor, president of the National Foundation for Infantile Paralysis, New York, as chairman of the American Red Cross. George L. Harrison, LL.D., New York, had been serving as temporary chairman.

Outbreak of Infantile Paralysis.—On July 12 Kentucky reported 129 cases of poliomyelitis with 4 deaths, and medical authorities were said to be tightening regulations to keep the outbreak to a minimum. An Associated Press report stated that the count in other states was Mississippi 23, Georgia 9, Virginia 26, South Carolina 16, Louisiana 68, Alabama 9 and Florida 13.

Pediatric Examinations.—The American Board of Pediatrics announces that a written examination for all applicants expecting to take the spring oral examinations will be held March 2, 1945. Oral examinations will be held in New York on April 14 or 15, 1945, applications to be in by Dec. 15, 1944, and Chicago, May 19 or 20, 1945, applications to be in by Jan. 19, 1945. Dr. C. Anderson Aldrich, 115½ First Avenue S.W., Rochester, Minn., is the secretary of the American Board of Pediatrics.

Fourth of July Accidents.—Deaths occurring during the recent Fourth of July week end totaled 447, according to the Associated Press. It was stated that although the death list totaled less than half of that expected by the National Safety Council the fatalities recorded were nearly 150 more than last year, when 298 were reported for the three day week end. Traffic mortalities led the list, with 177 counted in thirty-eight states and the District of Columbia. Thirty-seven accidental deaths occurred in California, with 22 traffic fatalities. Drownings accounted for 142 lives. No deaths were reported caused by fireworks.

Commonwealth Fund Merges Health Studies and Public Health.—The Commonwealth Fund, New York, has merged its division of health studies with the division of public health. Miss C. R. Randolph in the division of health studies has been named director of studies. Dr. Clarence L. Scamman is director of the division of public health and Dr. Harry E. Handley assistant director. Dr. Fred L. Moore recently resigned as director of the division of health studies of the Commonwealth Fund to assume a newly created position of professor of social and environmental medicine in the department of preventive medicine and community health at Long Island College of Medicine, Brooklyn (this issue, p. 859).

Smoke Association Creates Section on Health Aspects of Smoke.—The Smoke Prevention Association of America at a meeting on June 6 in Detroit passed a resolution calling for the creation of a section on the health aspects of the smoke nuisances to collect data and study the subject with a view to recommending necessary measures for the abatement of the smoke evil in the interest of the health of the people. The resolution was introduced by Dr. Emil Amberg, Detroit, chairman of the smoke abatement committee of the Wayne County Medical Society. Mr. Frank A. Chamber, 139 North Clark Street, Chicago, is the secretary-treasurer of the Smoke Prevention Association of America.

LATIN AMERICA

Health Activities in Latin America.—*New Institute of Hygiene.*—On May 15 the Institute of Hygiene, Havana, Cuba, was formally opened in new headquarters. The buildings were recently occupied by the headquarters of the police but have been renovated to accommodate the institute. There is a division concerned with clinical diagnostic procedures, including parasitology, hematology, serology and bacteriology; a division concerned with sanitary, chemical and physical examinations of water, sewage, swimming pools, food and drugs, and a division for the manufacture of vaccines, plasma, serums and the like to supply the public hospitals and dispensaries of Cuba. A close relationship will be developed with the Hospital for Infectious Diseases. The institute will have a staff of about 150 persons, including 10 physicians and 1 sanitary engineer. Dr. Moises Chediak is director of the institute, which will be under the direction of a board of seven trustees appointed by the president. Until two years ago the institute was a part of the Carlos Finlay Institute, which will continue the functions of teaching and research. A feature of the dedication was the presentation of decorations by the Cuban government to the Rockefeller Foundation and the American Public Health Association and the posthumous award to the American Yellow Fever Commission in honor of great services rendered to yellow fever control.

Distribution of Doctors.—The committee on education of the Puerto Rico Medical Association has completed a survey which shows that there are not enough physicians available for the needs of the people. While the proportion of doctors revealed in the survey is the most favorable yet registered, it is believed that services are inadequate for rural sections. The report recommends that an effort be made to reorganize the staffs of the health units in order to distribute these physicians better. The report adds that the establishment of a medical school, the provision of schoiarships for Puerto Rican students in other universities and the reorganization of municipal health and welfare boards would better stabilize the proportion of physicians to the civilian population.

Activities of Chest Physicians.—The American College of Chest Physicians announces that an Argentine chapter has been organized with Dr. Gumersindo Sayago, Cordoba, as president, Dr. Raúl F. Vaccarezza, Buenos Aires, vice president and Juan Carlos Rey, Buenos Aires, secretary-treasurer. Plans are under way to organize a chapter in Peru.

Tuberculosis Award Goes to René Mendoza. — Dr. René Garcia Mendoza Rabell, Havana, was recently presented with the Joaquin Martos Award for the best work presented on a tuberculosis subject. The prize was instituted by the National Council of Tuberculosis of Cuba in memory of the late Dr. Joaquin Martos.

Control Boards for Penicillin.—The various Latin American governments are cooperating in the distribution of penicillin by setting up control boards similar to those in the United States.

Foreign Letters

LONDON

(From Our Regular Correspondent)

June 17, 1944.

Plans for the Control of Narcotic Drugs in Liberated Europe

The Permanent Central Opium Board has issued a report stating that it has reason to believe that the military and civil authorities concerned are giving attention to the urgent question of restoring complete control over narcotic drugs in enemy occupied countries as soon as these are liberated. It will be for the military authorities, acting no doubt in arrangement with experienced civil drug control officials, to carry recommendations into effect. Unless control can be effected, the board considers that there will be grave danger of a recrudescence of illicit traffic similar to that which occurred after the last war, with consequent addiction among the suffering people. They think that in some cases there will be three stages for which provision may be necessary: (1) during the period of military control, (2) the period of reestablishment of national administration, with allied occupation and supervision, and (3) the initial period of full national control. During the first stage all drugs in civilian hands should be reported and placed under control of the designated authority. No imports should be allowed for civilian use, by relief organizations or otherwise, except under a license. Civilian supplies should be allowed solely on medical prescriptions, and periodic returns should be made by relief organizations and firms. Any factory manufacturing drugs should be placed under control, and no new one should be allowed to start production except under license. No imports of raw materials—opium, poppy straw, crude morphine, coca leaves, crude cocaine or Indian hemp—should be allowed except under license.

Control in the second and third stages should develop out of the measures taken during military occupation and lead to the full system of national and international control established under the conventions of 1925 and 1931. There are already indications that the illicit trafficker is very much alive. Sufferers from the war will in many cases succumb if the temptation is presented to them.

Shortage of Bodies for Dissection

There is at present a shortage here of human bodies for dissection. In a lecture delivered at the Royal College of Surgeons Dr. Neville Goodman, government inspector of anatomy, reviewed the situation since 1832, when the anatomy act was passed. This put an end to body snatching by empowering persons having lawful custody of a body to allow it to be dissected. But this power is overridden if the deceased expressed in writing or in the presence of two persons his wish not to be dissected, or if his relatives object. The greater part of the supplies for dissection are the unclaimed bodies of persons who have died in institutions. In 1941 and 1942 these were 97 per cent of all bodies available for dissection; the remaining 3 per cent were bequests by the deceased. The increased prosperity of the masses has led to a decline in the number of unclaimed bodies. The maximum number of students was formerly sixteen per body: two for each limb, four for the head and neck and four for the thorax and abdomen. The shortage of bodies has caused the number of students per body to be increased to twenty today.

As a remedy for the shortage, Dr. Goodman suggests that the number of bequests of bodies should be increased. He is convinced that if more was known by the medical profession and by the public of the need for bodies, and the conditions of disposal were explained, the proportion of bequests would rise rapidly. The professor of anatomy who receives a body is responsible for its preservation until it is ready for burial, which is conducted by clergyman of the faith which the deceased professed. Government forms for persons intending to bequeath their bodies are supplied.

The Reform of Medical Education

As stated in a previous letter to THE JOURNAL, the reform of medical education is being widely discussed. In his opening address to the General Medical Council Sir Herbert Eason, the president, stated that in all the evidence they had submitted to the Departmental Committee on Curriculum and Examinations the council called attention to the poor standard of English attained by many students when they began their medical studies. The chief reason for this defect, he said, was premature specialization. As long ago as 1934 the Council reached the conclusion that the standard of general education for prospective medical students should at least be equal to that of entry into other learned professions and not below that of the matriculation examination of universities. In 1942 the council added that this education should be broad and not regarded as complete unless it included the general principles of physical and biologic science. Courses leading to the first M. B. examination should be taken at a medical school, the council held; this considered view was based on the fact that laboratory facilities at schools vary widely, few approaching university standard. Moreover, it was felt that teaching these subjects at other schools encouraged the student to enter on the medical curriculum at too early an age and to start specializing too soon.

In most communities, Sir Herbert stated, the physician has always been looked on as an educated man of the world whose opinions on problems other than medical carry weight. To maintain this position it is essential that the medical student shall have a high standard of general education and an outlook beyond the confines of an examination syllabus. For complete and adequate medical education, he said, it is essential that teachers of preclinical subjects work in close collaboration with the teachers of clinical subjects, so that not only will the former be able to impress on students the bearing of preclinical subjects on their clinical studies, but also clinical teachers shall have associated with them the teachers of purely scientific subjects in any investigations.

As regards the curriculum generally, the Council must always bear in mind that it was primarily for the general practitioner and that higher medical education is a matter for postgraduate instruction, the president said. But the study and teaching of social and preventive medicine deserve further encouragement, he added, so that students and physicians may be better acquainted with the influence of social, occupational, genetic and domestic factors on the incidence of disease and so that measures other than those usually employed in remedial medicine should be promoted for the protection of the individual and the community against such forces as interfere with the full development and maintenance of man's mental and physical capacity. It would be an advantage both to the community and to the practitioner, he felt, if the medical student who had passed his final examination was to spend some time in practice under supervision before embarking on his own account.

Industrial Medicine

The increased attention now being given to what is called here social medicine, of which industrial medicine may be regarded as a branch, is shown by the invitation of the Social and Preventive Committee of the Royal College of Physicians to representatives of the General Council of the Trades Union Congress to attend one of the committee meetings and state their views on the training for and practice of industrial medicine. In general, the Trades Union Council desires

the medical profession to recognize more fully the importance of provision for the study of industrial disease. It has suggested a specialized course of training to qualify young practitioners for industrial appointments. At the same time the Council sees a need for a more general diffusion of knowledge of industrial medicine, because the doctor in the factory may not be the worker's medical adviser, and a full time factory doctor certainly will not be. In the opinion of the Trades Council the treatment of occupational diseases is a distinct branch of medicine to which special attention should be given in medical practice as well as in the factory health code. With regard to the status of industrial medical practice, the Council would like to see established a public service that would make the factory doctor independent of the employer. The meeting and the discussion were informal and take their place in a comprehensive inquiry which the Royal College of Physicians is making.

BRAZIL

(From Our Regular Correspondent)

June 3, 1944.

Brazilian War Bread

Dr. Josue de Castro, director of the Division of Food of the Brazilian Office of the Coordinator of Economic Mobilization, has just published a technical paper explaining the scientific foundations of the so-called war bread in Brazil. He stresses the importance of bread as a fundamental food, and considering that wheat, the basic raw material for its production, is largely an imported product in Brazil, he points out that this problem has always occupied the attention of the authorities. The "War Bread Committee" in charge of the task of seeking a rational solution for the problem was set up in due course by the coordinator of economic mobilization. As a first step in this direction the average consumption of bread in Brazil had to be ascertained, and it was found to be very low in contrast to other large bread consuming countries, this being explained by Brazilian food habits and by economic difficulties in obtaining this commodity. Although bread is not a protective food, as are meat, milk, vegetables and fruits, the possibility of improving the Brazilian diet by wider and more rational use of bread was judged worth examining in order to justify the measures to encourage a higher consumption of such a food among the people. The next step was to study the nutritive value of the type of bread consumed in Brazil during the recent difficult years, which is composed of a mixture of 85 per cent wheat flour and 15 per cent manihot flour, the nutritive properties of which are inferior to those of pure wheat flour. Studies were then made of the measures adopted by the American, British and Canadian governments in the present emergency. The so-called enriched bread in use in the United States is inaccessible in practice to poorer nations. A solution for the problem was then sought through an increase of the extraction rate of wheat, in use in Great Britain and in Canada, to obtain the maximum nutritive value from whole wheat. Research in this direction, in both Brazil and Argentina, was aimed at (1) a comparative study of the nutritive value of flour of different extractions, (2) the digestibility of the various types of bread prepared with these flours and (3) the perishability of the several types of flour. These investigations revealed that flour at 85 per cent extraction had the highest amount of nutritive elements, though it was inferior as to perishability. Nevertheless, these results decided the committee to recommend the use in Brazil of baking flour of 85 per cent extraction. This measure enables production to be increased by about 10 per cent for the same amount of wheat imported, at the same time producing a type of bread with much higher nutritive value than that heretofore in use.

The Death of Dr. Moncorvo Filho

Dr. Arthur Moncorvo Filho, one of the pioneers of pediatrics and infant hygiene in Brazil, died a few days ago at the age of 73. Dr. Carlos Moncorvo, his father, graduated in medicine in 1874 and was a pioneer in pediatrics in Brazil. He was a leading member of the National Academy of Medicine of Rio de Janeiro and a leading pediatrician of the city, in which he practiced until his death in 1899. Moncorvo Filho, who was an active collaborator with his father in establishing pediatrics as an independent branch of medicine in Brazil, in 1901 founded the Instituto de Proteção à Infancia (a child welfare institute), with a large infant clinic, and created a national foundation, with branches in several states of Brazil, to give specialized medical care to infants and to promote the health of the child, thus anticipating by many years the efforts of the public administration in behalf of child welfare. As a pediatrician he succeeded in having a large practice in Rio de Janeiro, but he has been particularly noted as the benefactor of many thousands of poor children cared for and assisted freely at his well known infant clinic. For some time the Instituto Moncorvo, as the institution was known, acted as an important educational center for many young physicians who intended to specialize in pediatrics. In 1941 the city administration bought the Instituto Moncorvo from its founder, in recognition of the good work done by him in the field of child welfare. Since then the building has been enlarged and refitted as a hospital and is now known as the Moncorvo Filho Hospital. During his life Dr. Moncorvo Filho published several books and many papers dealing with pediatrics and child welfare.

Brief Items

Dr. J. P. Fontenelle, professor of public health administration in the course of public health of the Oswaldo Cruz Institute, has been appointed director of the division of health information in the Rio de Janeiro city department of health.

Two new divisions have been created in the biologic laboratory of the medical department of the Brazilian army, one to produce therapeutic serums and the other to operate a blood bank. The building to accommodate these new divisions has recently been opened. It bears the name of the late Dr. Ismael da Rocha, who was a leading army physician and one of the most efficient among the past heads of the army medical department. The division of therapeutic serums and the blood bank will be directed by two army physicians, Major José F. Rodrigues and Capt. Flavio P. Mesquita.

Dr. Raul David de Sanson, a noted specialist practicing in this city, has been appointed professor of otorhinolaryngology at the Medical School of the University of Rio de Janeiro.

Marriages

JOHN J. MARLOWE, East Chicago, Ind., to DR. ROMONA A. MENZIE of Chicago, Aug. 22, 1943.

THOMAS LYNCH MURPHY to Miss Virginia B. McKenzie, both of Salisbury, N. C., June 10.

GEORGE K. STRODE, New York, to Mrs. Josephine Clark Dillard of Perry, Mo., June 29.

JOHN R. HOWARD, Vultee Field, Calif., to Miss Lucile V. Jarvis at La Salle, Ill., April 6.

WILLIAM HOLMAN DAUBS, Foreman, Ark., to Mrs. D. E. Nuchols of Texarkana, May 9.

HAROLD KATZMAN, Utica, N. Y., to Miss Frances Sonneborn of Miami Beach, Fla., June 4.

SAMUEL C. DE LAURA, Norfolk, Va., to Miss Margaret Kapp of Durham, N. C., June 1.

RICHARD H. BERG to Miss Edith Teak, both of Oxford, Mich., June 10.

GEORGE F. REED, Cohoes, N. Y., to Miss Marion Lee of Troy recently.

Deaths

Samuel Iglauer ✠ Cincinnati; Medical College of Ohio, Cincinnati, 1898; professor of otolarngology at the University of Cincinnati College of Medicine; specialist certified by the American Board of Otolaryngology and the American Board of Plastic Surgery; secretary, Section on Laryngology, Otology and Rhinology from 1922 to 1925 and chairman, 1925-1926, American Medical Association; member of the American Academy of Ophthalmology and Otolaryngology and second vice president in 1935; member of the American Laryngological, Rhinological and Otological Society and formerly a member of the council; member and in 1923 president of the American Broncho-Esophagological Association; in 1933 president of the Cincinnati Academy of Medicine; member of the American Laryngological Association, Cincinnati Otolaryngologic Society and the American Association for the Advancement of Science; member of the board of directors since 1925 of the Cincinnati Anti-Tuberculosis League; fellow of the American College of Surgeons; in 1913 member of the city charter commission; member of the medical advisory board number 1, Selective Service; a captain in the medical corps of the U. S. Army, 1918-1919; director, otolaryngology, Children's Hospital, Cincinnati General Hospital and the Jewish Hospital, where he died suddenly June 23, aged 72, of cerebral hemorrhage.

William Andrew Krieger ✠ Poughkeepsie, N. Y.; Albany Medical College, 1906; specialist certified by the American Board of Otolaryngology; member of the House of Delegates of the American Medical Association in 1942; member of the American Academy of Ophthalmology and Otolaryngology and formerly vice president; member of the Association for Research in Ophthalmology, Inc.; fellow of the American College of Surgeons and the New York Academy of Medicine; past president of the Dutchess-Putnam Counties Medical Society; in 1942 vice president of the Medical Society of the State of New York; served during World War I; consulting ophthalmologist and otolaryngologist, Vassar Brothers, Hudson River State and Bowne Memorial hospitals in Poughkeepsie, Harlem Valley State Hospital, Wingdale, Matteawan State Hospital, Beacon, Butterworth Memorial Hospital, Cold Spring, Sharon Hospital, Sharon, Conn., and the Wassaic State School, Wassaic; director and president of the Merchants' National Bank and Trust Company; died May 19, aged 61, of arteriosclerotic heart disease.

Edward Huntington Williams ✠ Santa Monica, Calif.; State University of Iowa College of Medicine, Iowa City, 1892; formerly demonstrator of histology at his alma mater; at one time assistant physician at the Matteawan State Hospital, Beacon, N. Y., and the Manhattan State Hospital, New York; served on the staffs of the Los Angeles General Hospital and five sanatoriums; associate editor of the tenth edition of the Encylopedia Britannica, published in England, and the United Editors' Encyclopedia; joint author, with Dr. Henry Smith Williams, of a five volume history of science, an eleven volume series called "Every Day Science" and "The Wonders of Science in Modern Life," in ten volumes; author of "The Walled City," "The Question of Alcohol," "Opiate Addiction—Its Handling and Treatment," "Our Fear Complexes," "The Doctor in Court," "Insanity Plea," "Animal Autobiographies" and others; died June 24, aged 75, of heart disease.

Leonard Wheeler Ely, Palo Alto, Calif.; College of Physicians and Surgeons, New York, 1895; at one time practiced in New York and Denver; member of the California Medical Association; chairman of the Section on Orthopedic Surgery, American Medical Association, 1913-1914; from 1913 to 1924 associate professor of surgery (orthopedics) at the Stanford University School of Medicine, where he had been professor of surgery (orthopedics) from 1924 to 1934, when he became professor of surgery (orthopedics) emeritus; captain, medical corps, U. S. Army, during World War I; formerly associated with the U. S. Public Health Service; served on the staffs of the Orthopedic and Presbyterian hospitals in New York; on the staff of the Stanford Hospital, San Francisco; author of "Joint Tuberculosis," "Bone and Joint Diseases" and "Inflammation in Bones and Joints"; died June 17, aged 75, of coronary thrombosis.

Frank Patrick McNamara ✠ Dubuque, Iowa; Harvard Medical School, Boston, 1918; specialist certified by the American Board of Pathology, Inc.; past president of the Iowa State Medical Society and the Dubuque County Medical Society; member of the American Association of Pathologists and Bacteriologists and the American Society of Clinical Pathologists; fellow of the American College of Physicians; at one time instructor in pathology at the Yale University School of Medicine, New Haven, Conn.; served on the staff of the Decorah Hospital, Decorah; on the staffs of St. Joseph Mercy and Finley hospitals; in 1933 he received the silver medal from the Scientific Exhibit of the American Medical Association for an exhibit illustrating the activities of the pathologic laboratory in a hundred bed hospital; died July 2, aged 59.

Elmer Isadore Huppert ✠ New York; University and Bellevue Hospital Medical College, New York, 1903; assistant clinical professor of surgery at his alma mater, now known as the New York University College of Medicine; member of the American Proctologic Society; fellow of the American College of Surgeons; assistant attending surgeon, third division, Bellevue Hospital; consulting proctologist, Long Beach Hospital, Long Beach, N. Y., St. John's Long Island City Hospital, Long Island City, Lutheran and Wickersham hospitals; died in the Doctors Hospital June 30, aged 64.

Ruby Lacey Cunningham ✠ Berkeley, Calif.; University of California Medical School, San Francisco, 1914; formerly instructor in medicine at her alma mater and assistant professor of hygiene and assistant physician to women in the students' health service; senior physician in the dispensary of the Ernest V. Cowell Memorial Hospital; past president of the Pacific Coast Section and a member and formerly vice president of the American Student Health Association; served as president of the Berkeley Health Center; died June 25, aged 64, of cerebral hemorrhage.

George Winston Acker, Port Gibson, Miss.; Medical College of Alabama, Mobile, 1889; secretary of the Claiborne County Medical Society, of which he had been past president; served as county health officer and county registrar; veteran of the Spanish-American War; died in a sanatorium at Vicksburg May 13, aged 77, of carcinoma of the rectum.

Walter Gladwin Allison, Hope, Ark.; Louisville and Hospital Medical College, Louisville, 1908; member of the Arkansas Medical Society; shot and killed May 24, aged 74.

Ernest Houstin Baird ✠ Dyersburg, Tenn.; Homeopathic Medical College of Missouri, St. Louis, 1903; past president and secretary of the Dyer-Lake-Crockett Counties Medical Society; past president of the West Tennessee Medical Society; councilor of the Ninth District of the Tennessee State Medical Association; on the staff of the Baird Brewer General Hospital; died May 14, aged 64, of coronary occlusion.

Charles G. Blackwelder, New Springfield, Ohio; University of Maryland School of Medicine, Baltimore, 1895; for many years township physician; served on the staffs of hospitals in Youngstown; died in Cuyahoga Falls May 18, aged 75, of cerebral sclerosis.

Felix Anthony Blanchard ✠ Bishopville, S. C.; Tulane University of Louisiana School of Medicine, New Orleans, 1921; died May 3, aged 46, of heart disease.

Bruce Tucker Bowens, Springfield, Mass.; Tufts College Medical School, Boston, 1898; died March 13, aged 75.

John N. Bradley, Schenectady, N. Y.; Albany (N. Y.) Medical College, 1875; died April 30, aged 91, of senility.

Julian Holt Buff, Orlando, Fla.; Emory University School of Medicine, Atlanta, 1916; member of the Florida Medical Association; on the staff of the Orange General Hospital; formerly on the staff of the Grady Hospital, Atlanta; died May 10, aged 52, of heart disease.

John Blair Cross, Harriman, Tenn.; Southern Medical College, Atlanta, 1896; for two terms a representative from Roane County in the state legislature; formerly city health officer; served during World War I; died April 15, aged 75.

Peter James Fagan, New York; Albany (N. Y.) Medical College, 1892; died April 1, aged 73.

Robert Furman, New York; Albany (N. Y.) Medical College, 1889; served on the staffs of Broome Street Dispensary, New York Polyclinic and Roosevelt hospitals; surgeon for the Illinois Central Railroad; died March 13, aged 81.

William H. Furman, Henderson, N. C.; Jefferson Medical College of Philadelphia, 1910; member of the Medical Society of the State of North Carolina; died April 3, aged 59.

Prince S. Gathings, Lawton, Okla.; Meharry Medical College, Nashville, Tenn., 1906; died March 11, aged 64, of heart disease.

Charles Sebert Hale, Cisco, Texas; Vanderbilt University School of Medicine, Nashville, Tenn., 1890; member of the State Medical Association of Texas; president of the chamber of commerce and the Lions Club; died March 22, aged 74, of pneumonia.

Harmon Lamontte Stanton ✠ Evansville, Ind.; State University of Iowa College of Medicine, Iowa City, 1920; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; past president of the Vanderburgh County Medical Society; president of the board of health; on the staffs of the Deaconess and St. Mary's hospitals; died April 23, aged 50, of cerebral hemorrhage.

Frank Stradling ✠ Earlville, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1900; died suddenly in Hamilton May 1, aged 69, of heart disease.

James Page Strong, Kennedyville, Md.; Maryland Medical College, Baltimore, 1907; formerly associate professor of gynecology at his alma mater; at one time on the staff of the Maryland General Hospital, Baltimore; died April 20, aged 73, of heart disease.

Marshall S. Surenson, Viroqua, Wis.; Rush Medical College, Chicago, 1894; died in the Lutheran Hospital, La Crosse, March 27, aged 72, of strangulated hernia, peritonitis and myocardial failure.

John Lincoln Taylor ✠ Libertyville, Ill.; Rush Medical College, Chicago, 1894; also a pharmacist; since 1900 coroner of Lake County; past president of the Lake County Medical Society; served on the district appeal board during World War I; on the staff of the Victory Memorial Hospital, Waukegan; one of the founders and on the staff of the Condell Memorial Hospital; died May 5, aged 78, of coronary occlusion.

LT. (JG) TIFFANY V. MANNING (MC), U.S.N.R., 1913-1944

MAJOR WILLIAM REEMTSMA, U. S. A. (NATIONAL GUARD), 1901-1943

William Lawrence Taylor, Holdenville, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1910; member of the Oklahoma State Medical Association; for many years president of the Hughes County Medical Society; at one time official state physician at every execution at the state penitentiary in McAlester; died in the Wesley Hospital, Oklahoma City, April 16, aged 65, of uremia.

Frank Scott Tuthill, Concord, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1891; member of the Michigan State Medical Society; president of the Farmers State Bank; died April 18, aged 77, of heart disease.

Thomas Poage Hunt Twaddell, Wynnewood, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1897; member of the Medical Society of the State of Pennsylvania; member of the board of health; served on the staffs of the Children's Hospital and Hospital of the University of Pennsylvania, Philadelphia, where he died April 12, aged 72, of pneumonia.

Lisby Lucius Wade ✠ Ryan, Okla.; University of Oklahoma School of Medicine, Oklahoma City, 1917; secretary of the Jefferson County Medical Society; at one time a school teacher; first county superintendent of schools; died in Waurika April 1, aged 62, of myocarditis.

Edgar S. Walford, Detroit; College of Physicians and Surgeons of Chicago, 1889; died May 6, aged 79, of bronchopneumonia.

James Ellsworth Webb, Mount Angel, Ore.; Willamette University Medical Department, Salem, 1898; served as mayor for many years; died April 23, aged 71, of carcinoma of the prostate with metastases.

Horace G. Welsh, Hutchinson, Kan.; Jefferson Medical College of Philadelphia, 1880; honorary member of the Kansas Medical Society; died March 9, aged 88, of carcinoma of the stomach.

Mark Hunking Wentworth, Concord, Mass.; Harvard Medical School, Boston, 1905; member of the Massachusetts Medical Society, American Psychiatric Association, New England Society of Psychiatry and the American Psychopathological Association; member of the staff of the Boston City Hospital; died May 15, aged 65, of pulmonary tuberculosis.

Elmer George Wherry, Newark, N. J.; Columbia University College of Physicians and Surgeons, New York, 1896; member of the Medical Society of New Jersey; medical director of the Babies' Hospital-Coit Memorial; served on the staffs of the Newark Memorial Hospital, Hospital of St. Barnabas and for Women and Children and the Newark Eye and Ear Infirmary; died in the Presbyterian Hospital June 24, aged 74.

John Calhoun White ✠ Hazlehurst, Miss.; Chicago College of Medicine and Surgery, 1912; also a pharmacist; died May 22, aged 58, of heart disease.

Willard Francis Whitmarsh, Bridgewater, Mass.; Harvard Medical School, Boston, 1891; member of the Massachusetts Medical Society; died May 15, aged 79, of injuries received from a fall.

Charles A. Wiest, Stover, Mo.; University of Maryland School of Medicine, Baltimore, 1897; member of the Selective Service System; for many years county physician; died April 20, aged 70, of heart disease.

Charles Frederick Wilson, St. Louis; St. Louis College of Physicians and Surgeons, 1893; Harvard Medical School, Boston, 1898; died April 9, aged 76, of lobar pneumonia.

George Edgar Winslow ✠ Boston; Harvard Medical School, Boston, 1901; chairman of the local draft board number 34; examining physician for the Boston City schools and for industrial plants in Hyde Park; for many years associate member of the staff, Norwood Hospital, Norwood, Mass.; died April 17, aged 67, of carcinoma.

Earle Cerenius Winsor, Schenevus, N. Y.; Syracuse University College of Medicine, 1917; member of the Medical Society of the State of New York; served during World War I; a charter member of the Schenevus Rotary Club; on the staff of the Aurelia Osborn Fox Memorial Hospital, Oneonta, where he died April 4, aged 53, of leukemia.

Franklin Crane Woodruff, Atlantic Highlands, N. J.; New York Homeopathic Medical College and Hospital, New York, 1887; died May 4, aged 78, of arteriosclerosis.

Ezekiel R. Young, Charco, Texas (licensed by years of practice); president of the school board; died April 21, aged 81, of angina pectoris.

KILLED IN ACTION

Tiffany Vincent Manning, Glen Cove, N. Y.; Long Island College of Medicine, Brooklyn, 1943; served an internship at the Meadowbrook Hospital, Hempstead; commissioned a lieutenant (jg) in the medical corps of the U. S. Naval Reserve on Oct. 12, 1943; killed in action in the North Atlantic area April 28, aged 30.

William Reemtsma, New Braunfels, Texas; Baylor University College of Medicine, Dallas, 1933; formerly secretary of the Comal County Medical Society; served as health officer of Comal County; commissioned a captain in the U. S. Army (National Guard) on Nov. 25, 1940; later promoted to major; killed in action in North African area Nov. 29, 1943, aged 42.

Bureau of Investigation

STIPULATIONS

Agreements Between Federal Trade Commission and Promoters of Various Products

Following are abstracts of stipulations in which promoters of "patent medicines," medical devices and cosmetics have agreed, following action by the Federal Trade Commission, to discontinue certain misrepresentations in their advertising. These stipulations differ from the "Cease and Desist Orders" of the Commission in that such orders definitely direct the discontinuance of misrepresentations. The abstracts that follow are presented primarily to illustrate the effects of the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act on the promotion of such products:

Dr. Caldwell's Laxative Senna Combined with Syrup Pepsin.—In April 1943 Dr. W. B. Caldwell, Inc., Monticello, Ill., and Sherman & Marquette, Inc., Chicago, which handles its advertising, stipulated with the Federal Trade Commission that they would cease representing that any therapeutic properties that the product may possess are enhanced by its pepsin content. They further agreed to discontinue any advertising which failed to reveal that the preparation should not be used when abdominal pain, nausea or other symptoms of appendicitis are present, provided, however, that such advertising need only contain the statement, "Caution: Use only as directed" when the labeling directions include a warning to the same effect. In this connection it is interesting to note that in 1939 the Commission had ordered the Caldwell concern to cease certain misrepresentations as to the efficacy of its product, then known under the various names "Syrup Pepsin," "Syrup of Pepsin" and "Dr. Caldwell's Syrup Pepsin." The order prohibited use of the word "pepsin," alone or in association with other words, to describe a preparation not containing sufficient pepsin as an active ingredient to possess substantial therapeutic value because of the pepsin content. The order intimated that the action of the Caldwell preparation depended chiefly on the presence of senna and cascara sagrada.

FaSet.—This device is put out by L. G. Carter and R. B. Kalbach, trading as FaSet Company, Rockville Centre, Long Island, N. Y. In June 1943 these persons and Henry Haas and Adrian Bauer, trading as Adrian Bauer Advertising Agency, Philadelphia, stipulated with the Federal Trade Commission to discontinue the following advertising misrepresentations: That the device is a "face lift" or a "new tissue form" or that its use imparts firmness or beauty to the face or neck, lifts, rebuilds or strengthens the muscle tissues, or removes double chin or face lines.

Formula 301 and Formula 301A.—These are put out by the Kay Preparations Company, Inc., of New York, which stipulated with the Federal Trade Commission in May 1943 to discontinue the following advertising misrepresentations: That Formula 301 is not a cosmetic, but a scientific discovery for the correction of beauty imperfections such as acne, pimples, enlarged pores, oiliness or skin eruptions, whether due to surface-skin disorders or systemic causes; that it acts "fast" or, in fact, is at all effective under the make-up to clear the skin of imperfections; that "no matter how bad your face may look now," amazing results will follow within two weeks by using the preparation, and that in 1 to 5 days, or within any specified time, it banishes skin imperfections. With regard to Formula 301A, the concern stipulated that it would cease representing that this is a "Pure Sulphur" soap, or more effective than any other standard facial soap in preventing rancidity of oil or eruption in the skin. Further, the concern stipulated that it would discontinue use of the term "dermatician" as applied to a cosmetician who is not a dermatologist, and the words "Special Sulphur" as part of the trade designation of Formula 301A.

Kovac, Chikovac, Papaya Dyjestin and Kovac Type Acidophilus Culture.—In May 1943 the Kovac Laboratories, Inc., Los Angeles, entered into a stipulation with the Federal Trade Commission to discontinue the following advertising misrepresentations, among others, concerning these products: That any of them is capable of bringing about good appetite, good digestion, vitality, strong fighting blood, sound nerves, refreshing sleep or efficient body resistance against disease; that by their use old age or body deterioration can be deferred or corrected, or that because of their acidophilus content, or otherwise, the Kovac preparations constitute effective treatments for neuralgia, asthma, bronchitis, high blood pressure and some other disorders. The concern further agreed to cease naming mineral salts or other chemical elements as ingredients of its products, which references might suggest that such content has any potency or significance in producing and sustaining healthy blood, glands, nerves or other fluids, plasma or tissues of the body, when, in fact, such ingredients are not present in amounts sufficient to have any appreciable effect for the purposes designated.

Seal-Cote.—That this lacquer will cause nails to grow longer, will aid their natural growth, or correct or prevent their splitting or breaking, were advertising misrepresentations which the Flamingo Sales Company of Hollywood, Calif., agreed to discontinue, in a stipulation that it entered into with the Federal Trade Commission in June 1943. The stipulation also was signed by Bernard Weinberg, trading as Milton Weinberg Advertising Company, Los Angeles, who prepared the advertising copy.

Correspondence

PENTOTHAL SODIUM SLOUGH

To the Editor:—In discussing the results of their experiments on the prevention of pentothal sodium slough by procaine hydrochloride, Elder and Harrison (THE JOURNAL, May 13, p. 116) suggest that the beneficial action of the procaine may be due to its prevention of local vasospasm.

I should like to call attention to some related observations reported by A. D. Speransky, director of the Department of Pathophysiology of the All-Union Institute of Experimental Medicine and published in English translation in 1935 (A Basis for the Theory of Medicine, Moscow, Inra Cooperative Publishing Society, 1935, p. 163). In a large number of experiments in dogs he was able to demonstrate the production of ulcers of the extremities after the application of irritating substances to the central end of the severed sciatic nerve. He also reported some successful attempts at the treatment of trophic ulcers in human beings by procaine block. These experiments were part of a much larger project in which the role of the central nervous system in the pathogenesis of organic disease was investigated in detail and many rather surprising experimental results were obtained.

I hope that this communication may stimulate further interest in repeating and either confirming or disproving the results of the Russian author. They are certainly too important to be neglected.

ARTHUR SHAPIRO, M.D., Brooklyn.

To the Editor:—In the May 13 issue of THE JOURNAL is an article by Elder and Harrison on the prevention of pentothal sodium slough with procaine hydrochloride. They stated that there had been no opportunity to test the method in man, and the suggestion is made that the method might be useful in preventing slough caused by the extravenous injection of other irritants.

In 1931 I was privileged to spend several weeks with the late Dr. Soma Weiss, who at that time was at the Thorndike Memorial of the Boston City Hospital. He was working with Dr. George Robb and Dr. Lawrence Ellis on the sodium cyanide circulation time. As an experimental subject I was given an injection of sodium cyanide solution, which through accident was deposited outside the vein. Dr. Weiss immediately injected 1 per cent procaine hydrochloride solution, which gave prompt relief from the intense pain. No slough appeared, although sodium cyanide solution is decidedly alkaline.

Since that time I have had the occasion to use and to show other physicians Dr. Weiss's effective method in both controlling pain and preventing slough following the accidental extravenous injections of irritating agents, in particular the arsenicals and mercurial diuretics.

MILTON KISSIN, Major, M. C., A. U. S.

To the Editor:—In THE JOURNAL, May 13, page 117, Elder and Harrison suggest the "possibility . . . of procaine in preventing tissue necrosis . . . in other solutions that are accidentally extravasated during intravenous medications, e. g., arsenical compounds. . . ." In Queries and Minor Notes in THE JOURNAL, Jan. 28, 1939, "M.D., Connecticut" asked how to relieve the patient who suffered from neoarsphenamine leaking into the tissues during an intravenous injection. I began using concentrated solutions of neoarsphenamine over twenty-five years ago and called attention to their use in the December 1913 issue of the *California State Journal of Medicine*. On more than one occasion I too, "owing to the patient's restlessness" or to mine (!) or to movements associated with release of tourniquets and the like have noted leaks into the tissues. Occasionally the patient remains silent. As a rule

patients at once complain of pain. With the slightest leak, even if the patient has not noticed it, it has been my custom immediately to inject 1 per cent solution of procaine hydrochloride into the tissues to dilute the neoarsphenamine solution but also because I have found that the procaine not only relieves immediately but because the resulting tissue reaction is much less than with the use of all other solutions that have been recommended. I have thus used procaine hydrochloride for more than twenty-five years, and, though during my years of teaching I always told my classes about it, it may be that giving this information wider publicity may save other physicians and patients considerable annoyance. I am making no claim to priority. Others before me may have used this method or may even have published a description of it.

RENÉ BINE, M.D., San Francisco.

PERNICIOUS VOMITING OF PREGNANCY

To the Editor:—On page 223 of THE JOURNAL, May 20, in a communication from a London correspondent, there is a discussion on the subject of hyperemesis gravidarum, pointing out two causative factors, hepatic necrosis versus hysteria.

In a small series each patient was given 100 mg. of thiamine hydrochloride intramuscularly every other day, with dramatic and startling results. The pernicious vomiting in all instances cleared after the fourth or fifth injection. Fifty per cent improvement had been noticed after the first injection. Every patient made a remarkable gain in weight within a week's time and went on a general diet without recurrence at any time during the current pregnancy. One patient's remark was interesting and characteristic: "I have been vomiting during my three pregnancies, even several days after I have been delivered. Every child was delivered in a different city by a different doctor, since we belong to the theatrical profession. This fourth pregnancy was the worse, but the 'shots stopped it.' I wish the other doctors would have done the same thing."

The theory of Sir Arthur Hurst of hepatic necrosis is substantiated by the facts that prior to the advent of thiamine a similar series of patients had been treated with glycogen enemas and later with a carbohydrate diet, with satisfactory results in the majority of cases but rather slowly, one to two months elapsing before improvement was noticed. With the thiamine therapy the results are accomplished in three to five days in the most pernicious cases of hyperemesis gravidarum.

Sir Arthur Hurst's theory with reference to hepatic necrosis is substantiated by the observation that an increase of glycogen to the liver cells either by glycogen or by glucose enemas from 25 per cent to 50 per cent in strength four times a day or as thiamine, which aids in the metabolism of carbohydrates and a greater deposition of glycogen into the liver cells, may bring about a condition which checks it completely and entirely with a simple and harmless agent.

In one of my last visits to the late Dr. Joseph B. De Lee, this new treatment for hyperemesis was related to him and he was very much interested. He suggested that it be tried at the Maxwell Street Maternity Center.

MEYER M. MARBEL, M.D., Chicago.

POTENTIAL DANGER OF SELF MEDICATION WITH FLUORIDES

To the Editor:—The subject of fluorine and its relation to dental caries is one which is receiving wide publicity in both the professional and the lay press. It has come to my attention that some dentists are advising their patients to use mouth washes containing sodium fluoride for self medication, and some of the solutions prescribed are as potent as 1 and 2 per cent solutions. Sodium fluoride is a highly toxic substance, and while its application in safe concentrations, under strict control by competent personnel, may prove to be a useful therapeutic agent, under other circumstances it may be definitely harmful.

DAVID B. AST, D.D.S., Albany, N. Y.
Assistant Director for Oral Hygiene, Division of Maternity, Infancy and Child Hygiene.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

EXAMINING BOARDS IN SPECIALTIES

Examinations of the Examining Boards in Specialties were published in THE JOURNAL, July 15, page 810.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Montgomery, Oct. 24-26. Sec., Dr. B. F. Austin, 519 Dexter Ave., Montgomery.

ALASKA: Juneau, September 5. Sec., Dr. W. M. Whitehead, Box 561, Juneau.

CONNECTICUT: * *Endorsement.* New Haven, July 25. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven.

DELAWARE: Dover, Oct. 10-12. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * Washington, November. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

INDIANA: Indianapolis, Jan. 3-5. Exec. Sec., Board of Medical Registration and Examination, Miss Ruth V. Kirk, 301 State House, Indianapolis 4.

IOWA: * Iowa City, Sept. 25-27. Dir. Division of Licensure and Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines.

KANSAS: Nov. 2-3 Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City.

KENTUCKY: Louisville, Sept. 11-12. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville.

LOUISIANA: September. Sec., Dr. R. B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MICHIGAN: * Ann Arbor, July 24-26. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MINNESOTA: * Minneapolis, Aug. 29-31. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul.

MISSOURI: St. Louis, Sept. 18-20. Sec., State Board of Health, Dr. James Stewart, State Capitol Bldg., Jefferson City.

MONTANA: Helena, Oct. 2-4. Sec., Dr. O. G. Klein, First Nat'l. Bank Bldg., Helena.

NEBRASKA: * Omaha, Sept. 26-28. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln.

NEVADA: Carson City, Aug. 7. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW HAMPSHIRE: Concord, Sept. 14-15. Sec., Board of Registration in Medicine, Dr. D. G. Smith, 77 Main St., Nashua.

NEW MEXICO: * Santa Fe, Oct. 9-10. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NORTH CAROLINA: Raleigh, Sept. 11-12. Sec., Dr. W. D. James, Hamlet.

OHIO: *Examination.* Columbus, Sept. 26-29. *Endorsement.* Columbus, Oct. 3. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: * Oklahoma City, Sept. 16. Sec., Dr. J. D. Osborn, Jr., Frederick.

OREGON: * Portland. July 26-27. Exec. Sec., Miss L. M. Conlee, 608 Failing Bldg., Portland.

SOUTH CAROLINA: Charleston, Sept. 11-13. Sec., Dr. N. B. Heyward, 1329 Blandena St., Columbia.

VERMONT: Burlington, Sept. 12-14. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA: Richmond, Sept. 19-22. Sec., Dr. J. W. Preston, 30½ Franklin Rd., Roanoke.

WEST VIRGINIA: Charleston, Oct. 2-4. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston 5.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

DISTRICT OF COLUMBIA: Washington, October. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

FLORIDA: Gainesville, Nov. 4. Final date for filing application is Oct. 20. Sec., Dr. J. F. Conn, John B. Stetson University, DeLand.

MICHIGAN: Ann Arbor and Detroit, Oct. 13-14. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

RHODE ISLAND: Providence, Aug. 16. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Explosion of Bulb in Diathermy Lamp.—The patient suffered from arthritis and neuritis and at intervals for about four years submitted to diathermy treatments administered by the physician defendant in his office. Dec. 6, 1940 she lay on a table with her back exposed to an infra-red deep therapy lamp about 2½ feet distant, having a 1,000 watt bulb. After she had been in this position for about fifteen minutes the light bulb exploded without warning and hot glass fell on her body, causing severe burns. She and her husband instituted an action for malpractice against the physician. In an attempt to produce evidence tending to prove negligence on the part of the physician, she called him as her witness and the physician testified that he had made no inspection of the light globe that exploded and could make none, other than turning it on to see if it was working; that he did not know what caused the globe to explode; that he had never heard of one exploding before; that there was no noticeable defect in the globe; that he had had globes of this type burning continuously for as much as seven hours without trouble; that there are hundreds of lamps of this type in use; that he frequently used this same lamp ten or twelve times a day; that the bulb in question was a standard one in general use, and that no manufacturer, so far as he knew, had ever theretofore recommended the screening of such lamps as a precautionary measure. At the close of the plaintiff's testimony the court entered a judgment for the physician, and the plaintiff appealed to the district court of appeals, fourth district, California.

The sole question to be decided here, said the appellate court, is whether or not the fact that the lamp globe exploded so speaks for itself as to justify an inference that the explosion occurred because of some negligent act on the part of the physician. In other words, under the facts of the present case can the doctrine of res ipsa loquitur be applied? The plaintiffs argued that this is one of that class of malpractice cases in which the acts done are so patently negligent that no expert testimony is required and from the occurrence of the incident alone negligence on the part of the physician may be inferred, citing *Ales* v. *Ryan*, 8 Cal. (2d) 82, 64 P. (2d) 409; *Ragin* v. *Zimmerman*, 206 Cal. 723, 276 P. 107; *Moore* v. *Steen*, 102 Cal. App. 723, 283 P. 833; *Brown* v. *Shortlidge*, 98 Cal. App. 352, 277 P. 134, and *Bence* v. *Denbo*, 98 Ind. App. 52, 183 N. E. 326. In the cases cited by the patient, said the court, respectively, a sponge was left in a patient during an operation, burns were suffered from too long or improper exposure to an x-ray machine, a surgeon while removing tonsils had knocked out one of the patient's teeth, and an x-ray machine had been so handled that it was permitted to fall on the face of the patient. In those cases no proof of a special standard of care was required and the doctrine of res ipsa loquitur was held applicable. The plaintiffs argued that the doctrine applicable in those cases is applicable also in cases in which injury has been caused by mechanical equipment which is under the exclusive control of the defendant. In support of that argument they first cited *Chauvin* v. *Krupin*, 4 Cal. App. (2d) 322, 40 P. (2d) 904, in which the plaintiff was burned while being given a permanent wave in a beauty shop. The court in that case said:

> The injury was one which in the natural course of things would not have occurred had defendants used due care, and plaintiff was therefore entitled to recover, unless the defendants offered a satisfactory explanation to overcome the presumptive evidence of their negligence.

The plaintiffs next cited *Helms* v. *Pacific Gas & Elec. Co.*, 21 Cal. App. (2d) 711, 70 P. (2d) 247, where the plaintiff had been injured while standing on a sidewalk by a falling portion of the glass globe of an electrolier. It was held in that case, in effect, that the danger could have been known by the defendant and that the question of whether proper inspection had been made was one for the jury. The plaintiffs next cited *Windas* v. *Galston & Sutton Theatres*, 35 Cal. App. (2d) 533, 96 P. (2d) 170, in which the injury involved was the result of a block of plaster falling from the ceiling. In holding the doctrine of res ipsa loquitur applicable in that case, the court there observed that plaster does not ordinarily fall from a ceiling if proper care is used to see that the ceiling is safe. In the cases cited by the plaintiffs, said the appellate court, it is pointed out that the res ipsa loquitur doctrine is applicable where it appears that the accident is of a kind which ordinarily does not occur in the absence of negligence on the part of the one having the management or control of the thing which caused the injury. The doctrine is further based on the theory that the defendant, having charge of the instrumentality in question, either knows the cause of the accident or had a means of knowledge in that connection which was superior to that possessed by the injured party. But, as was said in *Johnson* v. *Ostrom*, 128 Cal. App. 38, 16 P. (2d) 794:

> The converse of this rule is likewise true. If the evidence affirmatively shows that operator or manager of the instrumentality by means of which the injuries are inflicted has no superior knowledge or by the exercise of reasonable care is unable to secure information regarding the cause of the accident, or the evidence establishes the fact that the complainant possesses all the knowledge or information thereof which is reasonably accessible to the operator of the machine, then the doctrine of res ipsa loquitur has no application.

In this case, continued the court, there was no evidence tending to show why this light globe exploded or tending to show that the accident was one which, according to common experience, would not ordinarily occur except through some fault of the physician. In other words, there was no evidence justifying any inference that any amount of care which might have been exercised by the physician would have prevented the explosion or that he failed to use proper care. There is nothing in the evidence or in common experience which would justify an inference that an inspection could have been made which could have been of any avail in disclosing any defect which might have been expected to cause such an explosion. As is well known, such a light globe is a sealed unit which cannot be inspected in any manner which might be material here.

The physician, continued the court, possessed no knowledge as far as anything which caused this accident is concerned which was superior to that possessed by his patient. There is nothing in common experience which would suggest that the explosion which here occurred was one which would not have taken place except for the negligence of the physician, and it may not even be said that the physician had the management or control of the instrumentality in the sense that he had it within his power to control anything which caused the explosion. The complaint filed by the plaintiffs alleged that the physician so carelessly and unskilfully used, operated and controlled this electric lamp that he caused the injuries to his patient. There is no evidence to support that allegation and under the circumstances which here appear no inference is possible that the explosion occurred only because of negligence on the part of the physician and the doctrine of res ipsa loquitur is consequently not applicable.

The judgment in favor of the physician was accordingly affirmed.—*Crowe v. McBride, 149 P. (2d) 69 (Calif., 1944).*

Society Proceedings

COMING MEETINGS

Aero Medical Association of the United States, St. Louis, Sept. 4-6. Dr. David S. Brachman, 5440 Cass Ave., Detroit 2, Secretary.

American Congress of Physical Therapy, Cleveland, Sept. 6-9. Dr. Richard Kovacs, 2 East 88th St., New York 28, Secretary.

Delaware, Medical Society of, Lewes, Sept. 11-12. Dr. W. O. La Motte, 601 Delaware Avenue, Wilmington, Secretary.

National Medical Association, St. Louis, Aug. 14-17. Dr. John T. Givens, 1108 Church St., Norfolk, Va., Secretary.

Oregon State Medical Society, Portland, Sept. 2-3. Dr. Thomas D. Robertson, St. Vincent's Hospital, Portland, Secretary.

Utah State Medical Association, Salt Lake City, August 24-26. Dr. D. G. Edmunds, 610 McIntyre Bldg., Salt Lake City, Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1934 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

207:561-700 (May) 1944

*Clinical Aspects of Pain in Chest: I. Angina Pectoris. T. R. Harrison.—p. 561.
Infarction of Lateral Wall of Left Ventricle: Pathologic and Electrocardiographic Study. H. W. Thomson and H. Feil.—p. 588.
Abdominal Aortic Aneurysm: Rupture into Jejunum Preceded by Occult Blood in Stool. G. I. Hiller and R. M. Johnson.—p. 600.
Test for Vascular Tone in Humans and Its Application to Study of Vascular Diseases with Special Reference to Etiology and Prevention of Thrombophlebitis. M. Naide, with technical assistance of Ann Sayen.—p. 606.
Acute Thrombocytopenic Purpura in Infectious Mononucleosis: Report of Case. P. C. Lloyd.—p. 620.
"Heat Resistance" of Erythrocytes: Specific Test for Recognition of Marchiafava's Anemia. R. Hegglin and C. Maier.—p. 624.
Homologous Serum Jaundice: Review of Literature and Report of Case. J. R. Neefe, T. G. Miller and F. W. Chornock.—p. 626.
Blood Studies in Allergy: II. Presence in Allergic Disease of Atypical Lymphocytes and Symptoms Suggesting Recovery Phase of Infectious Mononucleosis. T. G. Randolph and Elizabeth Barber Gibson.—p. 638.
Relationship of Lymphogranuloma Venereum Infection to Incidence of Hyperglobulinemia. P. B. Beeson and E. S. Miller.—p. 643.
Chlorophyll: An Experimental Study of Its Water Soluble Derivatives; I. Remarks on History, Chemistry, Toxicity and Antibacterial Properties of Water Soluble Chlorophyll Derivatives as Therapeutic Agents. L. W. Smith.—p. 647.
Tumor Occurring in Superior Pulmonary Sulcus. I. Imber.—p. 654.

Pain in Chest, Particularly in Angina Pectoris.—Harrison states that pain in the chest is present in from 15 to 25 per cent of all adult patients who need hospitalization. A study has been carried on for a number of years and has dealt with several hundred patients. The present report presents an analysis of 77 patients with angina pectoris. The author applies the term angina pectoris to a condition characterized by recurrent attacks of discomfort in or near the chest, commonly induced by conditions which impose an additional burden on the heart, ordinarily dependent on disturbance of the oxidative processes in the myocardium and always attended by the likelihood of sudden death. The pain was felt in the substernal location in only about half of the patients. Pain entirely limited to the periapical, axillary or abdominal regions did not occur. The pain usually lasted only a few minutes, rarely longer than thirty minutes. No patient had pain lasting for only a few seconds. Pain of great intensity was exceptional, the discomfort being mild or minimal in more than half of the cases. The discomfort was constrictive or heavy in character in only about 50 per cent of the cases. Frequently the pain was of an aching quality. In addition to the generally recognized "trigger" factors of exertion, eating, emotion and cold, the recumbent posture and glucose deficiency were found to be common precipitating causes of the seizures. In exceptional cases anginal attacks with typical electrocardiographic changes may be induced by spontaneous hypoglycemia in patients who have no seizures with severe effort and no evidence of structural heart disease. The act of eating may precipitate anginal attacks in certain cases and may prevent them in others. Pain induced by the sitting or standing position or aggravated by breathing, coughing or swallowing can usually be ascribed to disorders other than angina pectoris. The most important features in the diagnosis of angina pectoris are (1) the history of relationship to effort, (2) the short duration of the pain and (3) the demonstration that the amount of muscular effort required to induce the pain is increased by glyceryl trinitrate. A large percentage of patients with angina pectoris also suffer from chest pain due to other disorders. Such disorders may either be related to angina pectoris (as in the case of myocardial infarction and reflex disturbances of the skeletal system) or unrelated to it (as in the case of gallbladder disease, hiatal hernia, eosphageal spasm and the like). Because of the frequent coexistence of two causes of chest pain, one of them may be overlooked unless unusual care is employed in obtaining the history.

American Journal of Physiology, Baltimore

141:165-296 (April) 1944. **Partial Index**

Cold Sweating in Motion Sickness. A. Hemingway.—p. 172.
Effect of Vitamins of B Complex on Resistance of Organism to Anoxia. H. F. Hailman.—p. 176.
Diuretic Action of Thyroid in Diabetes Insipidus. K. Hare, D. M. Phillips, J. Bradshaw, G. Chambers and Ruth S. Hare.—p. 187.
Recruitment of Mammalian Nerve Fibers. A. Rosenblueth.—p. 196.
Gastric Emptying Time of Man at High and Normal Environmental Temperatures. A. Henschel, H. L. Taylor and A. Keys.—p. 205.
*Successful Treatment of So-Called "Irreversible" Shock by Whole Blood Supplemented with Sodium Bicarbonate and Glucose. R. Levine, B. Huddlestun, H. Persky and S. Soskin.—p. 209.
Estimation of Anti-Fatty Liver Factor of Pancreas and of Pancreatic Juice by Use of Completely Depancreatized Dog Maintained with Insulin. M. L. Montgomery, C. Entenman and I. L. Chaikoff.—p. 216.
Orthostatic Circulatory Failure ("Gravity Shock") in Dog. H. S. Mayerson.—p. 227.
Patterns of Arterial Pressure Pulse. W. F. Hamilton.—p. 235.
Cardiac Insufficiency in Vitamin E Deficient Rabbit. O. B. Houchin and P. W. Smith.—p. 242.
Effects of Hexoses on Respiratory Exchange of Rhesus Monkeys. T. M. Carpenter and C. G. Hartman.—p. 249.
*Effect of Aluminum Hydroxide Gel on Gastric Secretion. W. L. Adams and B. B. Clark, with technical assistance of Dorothy B. Blair and J. J. Romano.—p. 255.
Effect of Vitamins and Sex Hormones on Dietary Achromotrichia in Mice. B. Lustig, A. R. Goldfarb and B. Gerstl.—p. 259.
Toxic Substances from Muscle. D. F. Pen, J. Campbell and Jeanne F. Manery.—p. 262.
Effect of Measurement Technics on Values for Red Cell Diameter, with Some Observations on Relationship Between Cell Diameter and Other Factors in Blood Picture. Jane M. Leichsenring, Eva G. Donelson and Lucille M. Wall.—p. 270.
Pepsin Secretion and Enterogastrone. M. I. Grossman, H. Greengard, J. R. Woolley and A. C. Ivy.—p. 281.
Effect of External Constriction of Blood Vessel on Blood Flow. R. E. Shipley and D. E. Gregg.—p. 289.

Treatment of "Irreversible" Shock.—Levine and his associates induced an irreversible stage of shock in 64 dogs. All the animals died when no treatment was given, and only 25 per cent survived when whole blood was used to replace the total amount bled. When the desired criteria for "irreversible" shock were obtained, different groups of animals were treated in different ways. Except for the first control group all animals were reinfused with the total amount of blood which had been withdrawn minus the amount lost by sampling and by unavoidable waste. In the second control group the difference between the amount of blood withdrawn and that available for reinfusion was replaced by isotonic solution of sodium chloride. The third group was given whole blood and sodium succinate, the fourth group whole blood and sodium lactate, the fifth group whole blood and sodium bicarbonate, the sixth group whole blood and dextrose, the seventh group whole blood and dextrose and sodium bicarbonate. Throughout these experiments the animals either died within eighteen hours after the institution of therapy or survived indefinitely. The authors think that their results hold promise of improved mortality statistics for the treatment of far advanced shock on the battlefield. Because whole blood is not readily available under those conditions, blood plasma supplemented with sodium bicarbonate and dextrose must be tested. It is suggested that a sweetened alkaline drink might be of prophylactic value for injured men in early shock, for whom prompt blood volume replacement is not likely to be available. The authors stress that acidosis, while not a cause of shock, is an important factor in determining the reversibility of far advanced shock. Whole blood supplemented by sodium bicarbonate and dextrose resulted in the survival of 62.5 per cent of dogs brought to the stage of so-called irreversible shock.

Effect of Aluminum Hydroxide Gel on Gastric Secretion.—Adams and Clark investigated the effects of aluminum hydroxide gel in moderate dosage when it was administered three times daily after a test meal for five consecutive days. The authors used Cope pouch dogs to determine the effect of moderate doses of sodium hydroxide gel on pouch secretion. They found that no depression of secretory activity occurred either during or after the administration of the antacid. The administration of moderate doses of aluminum hydroxide gel

was accompanied by occasional increases in volume, total chloride, total base and free acid of the pouch secretion, but in the majority of experiments these increases were too small to be significant.

American Journal of Psychiatry, New York

100:1-200 (April) 1944. **Partial Index**

American Journal of Psychiatry (Formerly American Journal of Insanity) 1844-1944. W. R. Dunton Jr.—p. 45.
Dorothea Lynde Dix: Servant of the Lord. C. O. Cheney.—p. 61.
Silas Weir Mitchell, 1829-1914: Father of Neurology and Mentor of Psychiatry in America. B. R. Tucker.—p. 80.
From Asylum to Hospital—A Transition Period. W. L. Russell.—p. 87.
Clifford Beers and American Psychiatry. A. H. Ruggles.—p. 98.
Rise to Person and Concept of Wholes or Integrates. A. Meyer. —p. 100.
Mental Deficiency Over a Hundred Years: Brief Historical Sketch of Trends in This Field. R. H. Haskell.—p. 107.
Contribution to History of Psychiatric Expert Testimony. H. M. Pollock and E. D. Wiley.—p. 119.
Psychiatry in Industry. V. V. Anderson.—p. 134.
Origins and Growth of Child Psychiatry. L. Kanner.—p. 139.
History of Mental Hygiene in the Schools. W. C. Ryan.—p. 144.
Development of Extramural Psychiatry in United States. G. S. Stevenson.—p. 147.
History of Psychiatric Education in the United States from 1844 to 1944. F. G. Ebaugh.—p. 151.
Some Trends of Psychiatry. A. Myerson.—p. 161.
Societal Evolution and Psychiatry. L. E. Hinsie.—p. 174.
Psychiatry as State Medicine. A. Deutsch. —p. 184.
Narrative for a Specialist. A. Gregg.—p. 191.
What of the Future for American Psychiatry? C. M. Hincks.—p. 195.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

51:407-536 (April) 1944

Roentgenologic Appearance of Gastrointestinal Tract in Scleroderma, C. H. Hale and R. Schatzki.—p. 407.
Roentgen Diagnosis of Fetal Meconium Peritonitis. E. B. D. Neuhauser. —p. 421.
Incidental Finding in Urograms Concerning Uterus. J. T. Marr and U. V. Portmann.—p. 426.
Roentgenogram and Some Chronic Nontuberculous Pulmonary Conditions. A. Rest.—p. 434.
Cardiac Mensuration. C. F. Sherman and E. F. Ducey.—p. 439.
Simple Graphic Method for Measuring Area of Orthodiagram. M. Mazer and Blanche B. Wilcox.—p. 444.
Acute Suppurative Arthritis of Hip in Childhood. P. E. Russo.—p. 447.
Fractures of Radial and Ulnar Axes: Unifying Concept, with Description of Certain Carpal Injuries, Including Parallel and Gear Rotations of Carpal Bones. M. S. Burman, S. E. Sinberg, W. Gersh and A. A. Schmier.—p. 455.
*Treatment of Cancer of Larynx by Roentgen Irradiation: Report of 5 Year End Results. J. V. Blady and W. E. Chamberlain.—p. 481.
*Irradiation Sickness: Hypothesis Concerning Basic Mechanism and Study of Therapeutic Effect of Amphetamine and Dextrodesoxyephedrine. E. L. Jenkinson and W. H. Brown.—p. 496.
Variations in Sensitiveness of Different Skin Areas to Erythema Dose of Roentgen Radiation. J. B. Herrmann and G. T. Pack.—p. 504.

Roentgen Irradiation in Cancer of Larynx.—Blady and Chamberlain present a five year survival study on 36 cases of cancer of the larynx treated with radiation. The treatment with radiation was selected for one or several of the following reasons: (1) presence of metastases in the neck on admission; (2) disease process too extensive for surgery; (3) suggested radiosensitivity of the tumor as determined by biopsy; (4) advanced age and poor operative risk; (5) complicating cardiac and renal disease; (6) recurrence after laryngofissure; (7) operation refused by the patient. Twenty-three patients had cancer of the intrinsic and 13 of the extrinsic larynx. The term "cancer of the intrinsic larynx" denotes origin of the tumor on the vocal cords, the ventricles or the subglottic region, while "cancer of the extrinsic larynx" includes origin on the arytenoids, aryepiglottic folds, base of the epiglottis and upper surface of the piriform sinuses. Intrinsic cancer is predominantly of squamous cell, grade 2, variety, whereas the extrinsic is usually of grade 3 or 4. Squamous cell carcinoma grade 2 is a radiosensitive growth when limited to the intrinsic larynx. Of the four recurrences in the intrinsic group, three were grade 3 and one was grade 2. Metastases are infrequently observed in intrinsic laryngeal cancer. Of patients who did not develop metastases at any time, 71 per cent survived more than five years. Of the extrinsic group 46 per cent had metastases on admission and none of these patients survived. For the intrinsic group treated with roentgen radiation, the net five year survival without evidence of recurrent or metastatic disease is 59 per cent while for the extrinsic group it is 25 per cent.

Amphetamine and Dextrodesoxyephedrine in Irradiation Sickness.—Jenkinson and Brown investigated irradiation sickness because of the prevalence of physical incapacity among patients receiving intensive roentgen therapy. An inhibiting effect on the gastrointestinal tract indicated possible benefit to the nausea and vomiting. Dextrodesoxyephedrine was studied because of its similarities to amphetamine. The authors review the therapeutic effect of amphetamine or dextrodesoxyephedrine on 69 patients with symptoms of irradiation sickness. A proposed hypothesis concerning the basic mechanism of irradiation sickness indicates the role of local and general increased capillary permeability. The pharmacology of amphetamine and d-desoxyephedrine indicates that they are of therapeutic value in irradiation sickness by their action in maintaining the peripheral circulating blood volume and preventing visceral stasis and splanchnic dilatation. The effectiveness is reduced by anemia, by nutritional and metabolic changes associated with debilitation, and by extensive metastases. The present study indicates that the management of irradiation sickness should include (*a*) A critical evaluation of each patient's physical condition prior to roentgen therapy. Corrective measures should be instituted in the presence of anemia, dehydration, acidosis, the deficiencies associated with debilitation and nutritional disturbances. (*b*) A prophylactic use of small oral doses of amphetamine or d-desoxyephedrine, increasing the dose with the first evidence of increasing weakness or lassitude. (*c*) A prophylactic use of the water soluble vitamins, which are readily depleted by disturbance of the digestive and absorptive mechanism. Evaluation of the therapeutic effect of amphetamine and d-desoxyephedrine indicates that the greatest value is in combating the weakness, exhaustion and lassitude of irradiation sickness.

American Review of Soviet Medicine, New York

1:293-384 (April) 1944

Rehabilitation of War Wounded in Soviet Union. A. N. Sukhov.—p. 293.
*Problem of Night Vision. K. Kekcheev.—p. 300.
*Nature and Origin of Altitude Pains. D. E. Rosenblum.—p. 303.
Effect of Anoxemia on Vestibular Apparatus. A. Popov and I. Borshchevski.—p. 310.
Effect of Hypoxemia on Secondary C Hypovitaminosis. Y. E. Bronstein.—p. 314.
Occurrence in Urine of Type Specific Precipitinogen in Scarlet Fever. E. M. Lampert.—p. 317.
Natural Immunity Against Diphtheria in Remote Areas of Uzbekistan. C. R. Gildin, A. I. Grigorieva and V. V. Voiloshnikova.—p. 322.
Eradication of Malarial Focus in North (Province of Archangel). E. D. Levenson, E. I. Fastovskaya, A. I. Khovanskaya and N. N. Dukhanina. —p. 329.
Syndrome of Endocrine Origin. N. A. Shereshevski.—p. 337.
Phototherapy of Burns. P. M. Leonenko.—p. 340.
Gunshot Wounds of Maxillofacial Region with Spinal Complications. G. D. Aronovich.—p. 344.
Closure of Granulating Wounds by Means of Button Sutures. D. A. Entin.—p. 351.
Secondary Treatment of Wounds. A. B. Vishnevski.—p. 355.
Role of Soviet Investigators in Development of Blood Bank. C. R. Drew. —p. 360.

Night Vision.—Kekcheev points out that methods developed in prewar days for changing visual thresholds by application of caffeine or strychnine had been only of laboratory interest. The literature offered a few suggestions for altering the threshold of certain sensory organs by stimulating other sensory organs. It was established that the stimulation of any external sensory organ (hearing, smell, touch and taste) may augment or diminish the thresholds of visual perception. The author showed that a change in the acuity of night vision produced by stimulation of other sensory organs was not an isolated process but was part of a diffuse autonomic reflex. The thresholds of night vision varied with the pulse rate, the blood pressure level, respiration and electrical resistance of the skin to direct current. Not all stimuli were equally effective in raising the threshold of night vision. Taste, cold and proprioceptive (moderate effort) stimuli were chosen as being the most practical and convenient. During drowsiness the sensitivity of the eye shows a sharp decrease. The application of cold not only restores vision and hearing but terminates drowsiness as well. By applying taste, cold and proprioceptive stimuli the dark adaptation period was reduced to from five to six minutes. The acceleration of the dark adaptation period is of a great practical importance under battle conditions, for instance for night fliers, who must discern the enemy bomber in the gloom of the night in so-called dazz-

ling of the eyes by a searchlight, rocket or the flash of tracer bullets. Experiments carried out in 1943 in the writer's laboratory in Moscow showed that the use of red eyeglasses five to ten minutes after the white light has begun to act promptly restored vision to its normal threshold and occasionally intensified it. Thus the same white light which had previously destroyed the sensitivity of the dark adapted eye increased that sensitivity when filtered through red glasses.

Nature and Origin of Altitude Pains.—Ascents to a rarefied atmosphere and prolonged stay at low barometric pressure may produce pains which are most frequently localized in joints and surrounding tissues. In some cases the pain in the joint is accompanied by acute subjective disorders, such as dizziness, pallor, excessive perspiration, nausea and a feeling of faintness. Malaise, weakness, dyspnea, chills and high temperature continue for several hours on return to normal pressure. The pain disappears, but a feeling of awkwardness and heaviness in the involved extremity persists for from one to two hours. Some investigators regard altitude sickness as the result of hypoxemia, others believe that altitude pains are a manifestation of a rheumatoid syndrome. Still another hypothesis is that altitude pains are symptoms of caisson disease in which, on decompression, nitrogen bubbles are released in the tissues. The author reports observations on aviators and experiments on goats, dogs and rabbits. He assumed that the caisson theory was correct and that the pains resulted when nitrogen was released from the fluids and tissues through decompression. The experiments were based on the further assumption that altitude pains would not occur if the nitrogen was "washed out" of the organism prior to the ascent. Ten men did not have altitude pain after nitrogen elimination, although they did have pain in almost all control ascents at lower altitudes. Most of the animals in the author's experiments developed the classic picture of caisson disease. Postmortem studies on the animals which died as a result of rapid decompression revealed typical symptoms of acute caisson disease. Numerous gas emboli were found in the vascular system and in the synovial fluid of the joints in all cases. The adipose tissue, especially in the abdominal cavity, was friable on palpation.

Annals of Surgery, Philadelphia

119:481-640 (April) 1944

Newer Aspects of Ruptured Intervertebral Disks. W. E. Dandy.—p. 481.
Spondylolisthesis: Analysis of 59 Consecutive Cases. G. A. Caldwell.—p. 485.

Symposium on Chemotherapy

Report on Healing of Wounds as Influenced by Use of Sulfonamides and Cotton Thread Sutures. J. E. Cannaday.—p. 498.
Chemotherapy of Intracranial Infections: Observations on Use of Sulfonamides and of Penicillin Under Various Experimental Intracranial Conditions. C. Pilcher.—p. 509.
Clinical and Laboratory Experiences with Succinylsulfathiazole. H. L. Archer and E. P. Lehman.—p. 518.
Treatment of Burns Complicated by Fractures of Extremities. H. J. Warthen Jr. —p. 526.
*Postoperative Salt Intolerance. F. A. Coller, K. N. Campbell, H. H. Vaughan, L. Vivian Iob and C. A. Moyer.—p. 533.
Treatment of Metastatic Carcinoma of Neck. J. B. Brown and F. McDowell.—p. 543.
Congenital Atresia of Esophagus, with Tracheoesophageal Fistulae: Transpleural Operative Approach. A. O. Singleton and M. D. Knight.—p. 556.
*Chronic Cystic Mastitis, with Particular Reference to Classification. W. H. Cole and L. J. Rossiter.—p. 573.
Surgical Management of Cryptorchidism. R. E. Cone.—p. 591.
Extraskeletal Osteogenic Sarcoma: Report of Case of Osteogenic Sarcoma of Lip. W. H. Parson and J. C. Henthorne.—p. 595.
Value of Nonprofit Blood Banks for Civilian Use as Planned by Office of Civilian Defense. W. B. Russ.—p. 603.

Postoperative Salt Intolerance.—Coller and his associates show that although the body of a normal person is generally capable of handling relatively large amounts of isotonic saline solutions without showing significant derangement in the regulation of body functions there are many patients who are incapable of tolerating relatively small excesses of salt solution during the immediate postoperative period. The type of illness that may follow the administration of saline or isotonic solution of three chlorides varies. There are three predominant and fairly distinctive symptoms and sign complexes. Because of the relatively high incidence of salt intolerance following a general anesthetic, no isotonic saline solution or isotonic solution of three chlorides should be given during the day of operation and during the subsequent first two postoperative days. The fluid requirement of the patient is met with dextrose solution. If a significant loss of extracellular fluid occurs during the foregoing period, it is replaced with 0.5 per cent sodium chloride solution to which 50 Gm. per liter of dextrose has been added. Isotonic saline solution (0.9 per cent) or isotonic solution of three chlorides is used to replace extracellular fluid loss after the postoperative urinary suppression has disappeared, usually after the second postoperative day. Great care must be used in administering isotonic saline solution and isotonic solution of three chlorides to patients who are hypoproteinemic, anemic, acidotic or oliguric. The authors recommend that the correction of uncompensated extracellular fluid deficiency states be made on the basis of the physiologic response to test doses of the appropriate salt solution rather than on the basis of the plasma chloride, the carbon dioxide combining power, the nonprotein nitrogen, the plasma protein or the hemoglobin levels.

Chronic Cystic Mastitis.—Cole and Rossiter make a plea for a classification which would be of clinical as well as of pathologic significance. Their classification is based on two factors: the predominance of the pathologic lesion present and the relative danger of transformation to carcinoma. The following groups are included: (1) adenofibrosis, (2) benign parenchymatous hyperplasia, (3) precancerous hyperplasia and (4) cystic disease. A single specimen may exhibit gradations of all four types described, but with few exceptions one of them predominates. This classification is based on the supposition that carcinoma may at times be superimposed on chronic cystic mastitis. Carcinoma can and does develop in certain types of chronic cystic mastitis. It is most apt to develop in precancerous hyperplasia, which is in itself a benign disease. This lesion consists of an epithelial hyperplasia which resembles that seen in carcinoma. The hyperplasia exceeds the benign limits characterizing parenchymatous hyperplasia yet lacks the invasiveness and anaplasia of cancer. This is a controversial group, clinically speaking, as it is impossible to tell which of these cases will go on to actual malignancy. The authors have seen this lesion in close proximity to unquestioned cancer and have seen cancer develop in breasts known to harbor such changes through biopsy at some previous time. In view of the possibility of the development of carcinoma in precancerous hyperplasia, the authors recommend simple mastectomy if removal of a nodule reveals a hyperplasia of the precancerous type. Adenofibrosis and cystic disease are least susceptible to malignant change and, fortunately, are readily distinguishable clinically and pathologically from parenchymatous hyperplasia and precancerous hyperplasia.

Archives of Neurology and Psychiatry, Chicago

51:305-414 (April) 1944

Dystonia: I. Historical Review: Analysis of Dystonic Symptoms and Physiologic Mechanisms Involved. E. Herz.—p. 305.
Id.: II. Clinical Classification. E. Herz.—p. 319.
Delirium: I. Electroencephalographic Data. J. Romano and G. L. Engel.—p. 356.
II.: Reversibility of Electroencephalogram with Experimental Procedures. G. L. Engel and J. Romano.—p. 378.
Biochemical Aspects of Glutamic Acid Therapy for Epilepsy. H. Waelsch and J. C. Price.—p. 393.
*Fatalities Associated with Electric Shock Treatment of Psychoses: Report of 2 Cases, with Autopsy Observations in 1 of Them. A. Gralnick.—p. 397.
Tremor and Babinski Sign in Alcoholic Patients: Incidence and Interpretation. A. P. Friedman and J. E. Roy.—p. 403.

Fatalities in Electric Shock Treatment of Psychoses.—Gralnick reports two deaths associated with electric shock treatment. The first patient died one week after her fourteenth treatment in a hyperpyretic state associated with status epilepticus; the second two days after his second treatment. No definite conclusion can be made with respect to the first case because of the absence of autopsy evidence. The acute nature of her death suggests some connection between the two events. It is possible that in this patient, as in a few of the cats studied by Alpers and Hughes, hemorrhages occurred in the hypothalamic region which were sufficient to cause the hyperpyrexia and status epilepticus. The fact that the patient died one week after her last treatment speaks against this possibility, but the

exact time of occurrence of hemorrhage is not known. It is also possible that the current produced damage to the cells in the region of the already labile heat regulating center. These changes could have been associated with punctate hemorrhages and subsequent edema to produce the same result. Necropsy studies on the second patient disclosed evidence of cerebrovascular syphilis and other changes which were possibly due to the treatment itself. The alterations were not sufficient to account for death. The cause of death after electric shock treatment is still obscure. Electric treatment has attendant serious dangers and should not be given to patients with a history of vascular or cerebral disease.

Archives of Physical Therapy, Chicago

25:199-252 (April) 1944

Mechanics in Relation to Derangement of Facet Joints of Spine. Jessie Wright.—p. 201.
*Fever and Sulfadiazine Therapy in Resistant Gonorrhea. S. Licht and V. Dick.—p. 207.
Histamine Ion Transfer, Five Year Evaluation. I. F. Hummon Jr. —p. 212.
Flexibility of Healthy Children. A. D. Gurewitsch and Margaret A. O'Neill.—p. 216.
Physical Medicine in Neuropsychiatric Diseases, with Special Reference to Veterans Administration Beneficiaries. A. B. C. Knudson.—p. 222.

Fever and Sulfadiazine Therapy in Resistant Gonorrhea.—Licht and Dick treated 119 young men with recently acquired, sulfonamide resistant, gonorrhea by combined drug and fever therapy. All had failed to respond to two or more courses of sulfonamide compounds, each course consisting of at least 20 Gm. of drug given in five days. On the day preceding fever treatment fluids were forced up to 3,000 cc. and carbohydrates were given in the form of sweetened orange juice. During the fever treatment fluids were given by mouth in the form of 0.3 per cent iced salt solution. An intake of more than 400 cc. per hour was discouraged because of the regurgitation seen after forced drinking. Oxygen was given continuously through a nasal catheter. Originally the authors administered 10 Gm. of sulfadiazine in divided doses during the eighteen hours immediately preceding treatment. This produced excessively high blood concentration in some patients. A trial administration was made to determine the amount of medication required to attain a blood concentration of from 11 to 12 mg. per hundred cubic centimeters when fever would be started. When the drug is administered up to the hour of treatment it remains in the stomach and may provoke vomiting. By changing the schedule of drug ingestion so that the last dose was given at or before 5 a. m. instead of at 7 a. m., the incidence of vomiting during treatment was reduced. The duration of the fever should depend on the tolerance of the patient. Eight hours is most desirable, but there should be no hesitancy in discontinuing it and repeating the treatment if necessary.

Canadian Medical Association Journal, Montreal

50:297-402 (April) 1944

Biologic Significance of Human Constitution in Disease. G. Draper. —p. 297.
Treatment of Cancer of Prostate. C. Huggins.—p. 301.
Role of Medical Research in Medical Center. C. F. Code.—p. 308.
Women in Industry. Lydia G. Giberson.—p. 313.
*Treatment of Silicosis by Aluminum Powder. D. W. Crombie, J. L. Blaisdell and G. MacPherson.—p. 318.
Hypertension After Removal of Renal Calculus. A. MacKay, L. D. Proctor and N. W. Roome.—p. 328.
Mycotic Aneurysm of Superior Mesenteric Artery as Complication of Subacute Bacterial Endocarditis. S. T. Laufer and R. P. Smith. —p. 332.
Ophthalmology in Royal Canadian Air Force. J. V. V. Nicholls.—p. 335.
Expectorant Action of Paregoric. E. M. Boyd and M. L. MacLachlan. —p. 338.
Cyanosis of Unusual Origin in Pregnancy (with Report of Case of Sulfhemoglobinemia). W. B. Ayre.—p. 344.
Clinical Value of Cholangiography. D. Macdonald.—p. 349.
Psychosis in Hypoparathyroidism. E. P. Scarlett and W. J. Houghtling. —p. 351.
Peptic Ulcer Problem: Series of 181 Cases from Royal Canadian Navy. R. A. G. Lane.—p. 353.
Granuloma of Umbilicus. S. Gold.—p. 354.

Aluminum Powder in Treatment of Silicosis.—A clinic was established at Timmins, Ont., where a large number of silicotic subjects could be observed. Only men who were still exposed to silica dust and who had uncomplicated silicosis with measurable pulmonary disability were chosen for treatment with aluminum powder. Before treatment was instituted, each worker was carefully studied and respiratory function tests were carried out. The latter included a study of total lung volume and pulmonary ratios as described by McCann and his co-workers. Pulmonary ventilation studies were also made. Selected men were treated with daily inhalation of fine aluminum powder, freshly ground from small aluminum pellets in a specially constructed mill. Treatment was given just before or after a shift. Treatment was begun by five minutes' inhalation through the powder mill. This period was gradually increased to thirty minutes daily and was continued in some cases almost a year, a small number of men receiving approximately 300 treatments, the majority receiving about 200. About 50 patients have received this form of therapy, 34 of whom have completed the course prescribed. It was shown conclusively that the administration of aluminum powder is entirely harmless. Out of 34 cases studied 19 have shown clinical improvement, apparent chiefly in the lessening or disappearance of shortness of breath, cough, pain in the chest and fatigue. A reduction in the incidence of colds and a gain in weight have also been observed in many patients. While the condition of 15 patients has remained stationary, it must be emphasized that they are no worse and their condition has not progressed in spite of continuous employment in silica dust during the period of investigation. Respiratory function tests, repeated at intervals of about every three months, have shown improvement in 12, or about one third, of the treated cases. While 22 remained stationary, they are no worse in spite of continued exposure to silica dust. Six of a group of 9 controls, untreated by aluminum, have shown progression of their disease while under observation. Aluminum dust cannot be regarded in any sense as a "cure" for silicosis as far as restoring to normal lung tissue which has already undergone fibrotic change is concerned. Its use is followed by beneficial results in a significant proportion of cases, chiefly in the amelioration of symptoms and in the increased capacity to work.

Journal of Urology, Baltimore

51:333-446 (April) 1944

Classification of Renal Neoplasms: Clinical and Pathologic Study Based on 199 Cases. M. M. Melicow.—p. 333.
Tumors of Renal Pelvis. D. R. Melen.—p. 386.
Tuberculoma of Ectopic Kidney. M. Nachman.—p. 395.
Clinical Significance of Congenital Anomalies of Kidney and Ureter. O. S. Culp and P. E. Hiebert.—p. 397.
Suprapubic Cystotomy Preliminary to Transurethral Resection in Selected Cases of Prostatism. J. A. Lazarus.—p. 404.
Diverticulum of Female Urethra. J. G. Menville and J. D. Mitchell Jr.—p. 411.
*Patent Urachus: with Report of 2 Additional Cases. D. W. Atcheson. —p. 424.
Relationship of Urinary Tract Infections to Urolithiasis. W. J. Ezickson.—p. 431.
Experiences with Ombredanne Operation for Hypospadias. M. Muschat. —p. 437.
Prevention of Experimental Nephrosclerosis with Methyltestosterone. H. Selye and E. M. Rowley.—p. 439.
Effect of Seminal Constituents on Spermatozoa. R. L. Brown.—p. 443.

Patent Urachus.—Patent urachus is rare, only 148 cases having been reported in the last four hundred years. Atcheson reports 2 army privates with this abnormality observed within one month at his station hospital. The generally accepted theory is that the urachus is the result of the bladder developing in the region of the umbilicus and later withdrawing deep into the pelvis. The result is a cone shaped outgrowth from the dome of the bladder with its apex at the umbilicus. Eventually the entire tube becomes smaller until it finally closes off from the bladder. When it does not close, it is known as a patent urachus. There are four possible anomalies which may result from this process going astray: 1. The tube may open into the bladder but not reach the umbilicus. 2. It may open at the umbilicus and not reach the bladder. 3. It may extend from the bladder to the umbilicus as a fistula. 4. It may close off in sections and form small cysts. Patent urachus may easily be confused with intra-abdominal conditions, such as acute appendicitis and cystic tumors, if a history of drainage from the umbilicus is not obtained. In some cases the urachus will change from one type to another. In the 2 cases presented both existed as fistulous types, as evidenced by the history of

urine draining in early life. As the inflammatory changes occurred, the fistula sealed off and the sinus type resulted. It is suggested that the peritoneum be routinely opened at a point below the umbilicus and the attached tract and umbilicus be excised in toto. An important part of the therapy is the treatment of the infection in the tract before the surgical intervention. This can be done by drainage and irrigation with a solution such as azochloramide.

New York State Journal of Medicine, New York

44:945-1056 (May 1) 1944

Radium in Present Day Therapeusis. D. Quick.—p. 981.
Management of Carcinoma of Corpus Uteri. J. A. Corscaden.—p. 986.
Crude Liver Extract as Aid to Arseno and Heavy Metal Therapy. G. D. Astrachan.—p. 992.
Treatment of Nonpyogenic Infections with Radiation Therapy. I. I. Kaplan.—p. 1004.

Crude Liver Extract as Aid to Metal Therapy.—Astrachan presents data on the value of crude liver extract in patients with intolerance to arsenicals or heavy metals. He reports observations on 114 patients. Crude liver extract is a useful supportive measure. It prevents some manifestations due to intolerance to arsenicals or heavy metal, especially in cases of gastrointestinal disturbances (improvement in 60 per cent of the cases). A few patients with pruritus and mild skin manifestations were also benefited by liver therapy. Best results were obtained in cases in which the largest number of liver extract injections were administered. These injections cause a decrease of the icterus indexes and thus improve the impaired function of the liver. Caution must be observed in administering liver extract. In some cases the intravenous method of administration may be used.

Ohio State Medical Journal, Columbus

40:397-500 (May) 1944

Conservation of Industrial Manpower. C. P. McCord.—p. 413.
Absenteeism and the Doctor. F. F. Tallman.—p. 419.
Occupational Disease Problems and How to Meet Them. R. T. Johnstone.—p. 425.
Organized Air Evacuation Service of Army Air Forces. R. L. Meiling.—p. 434.
Parathyroid Adenoma—Report of Unusual Case. D. Goldman and A. Sapadin.—p. 437.
Clyster in Early Medical Practice. P. D. Jordan.—p. 441.

Physiological Reviews, Baltimore

24:169-296 (April) 1944

Benign Meliturias. J. C. Bock.—p. 169.
Extrinsic Factors That Influence Carcinogenesis. H. P. Rusch.—p. 177.
Distribution of Vitamin A in Tissue As Visualized by Fluorescence Microscopy. H. Popper.—p. 205.
*Histopathology of Radiation Lesions. S. Warren.—p. 225.
Bread Problem in War and in Peace. S. Lepkovsky.—p. 239.
Changes in Fetal Circulation at Birth. D. H. Barron.—p. 277.

Histopathology of Radiation Lesions.—Warren discusses lesions caused by types of radiations used therapeutically, such as electromagnetic radiation of a wavelength ranging from 10 to 0.05 angstroms, corpuscular radiation as the alpha and beta radiation from radium or certain of the temporarily radioactive isotopes, and neutrons. Tissues or tumors are classified as radiosensitive if there is gross change with radiation of less than 2,500 roentgens given under ordinary therapeutic conditions. Such radiation does not usually injure most tissues permanently. A tissue is considered radioresponsive if such alteration occurs with a range between 2,500 and 5,000 roentgens and radioresistant if over 5,000 roentgens is required for a response. At or above this dose some permanent injury is done to a number of normal tissues. It is important not to confuse radiosensitivity of a tumor with radiocurability of that tumor. Thus a lymphosarcoma is highly radiosensitive but rarely cured, while epidermoid carcinoma grade 1 of the lip is resistant but often cured if the dose is sufficient. Many of the tumors that respond well to radiation initially will recur, usually in a form more resistant to radiation than were the cells of the original tumor. While in general the radiosensitivity of tumors tends to follow that of the type cell from which they are derived, striking variations exist. There are also variations in sensitivity determined by the stroma of the tumors. A relatively acellular supporting tissue, such as cartilage or bone, gives a less favorable therapeutic reaction than does a cellular one, as newly formed connective tissue or invaded muscle. For example, a basal cell carcinoma of the skin is easily cured by radiation when located on the cheek, whereas one occurring on the forehead invading the frontal bone is extremely resistant. Increased amounts of intercellular substance in the supporting tissue of the tumor or secondary infection tend to increase resistance, whereas a greater degree of vascularity tends to decrease resistance.

Public Health Reports, Washington, D. C.

59:513-540 (April 21) 1944

Hospitals in Public Health Panorama. W. F. Draper.—p. 513.
Experimental Leptospirosis in Hamsters (Cricetus Auratus). C. L. Larson.—p. 522.

59:541-572 (April 28) 1944

Experiments on Pharmacologic Action of Succinchlorimide. E. F. Stohlman and M. I. Smith.—p. 541.
Patch Test in Contact Dermatitis. L. Schwartz and S. M. Peck.—p. 546.

59:573-608 (May 5) 1944

Airplane Dusting with Paris Green for Control of Anopheles Quadrimaculatus Say in Water-Chestnut Covered Areas of Potomac River During 1943. W. C. Murray and H. Knutson.—p. 573.
*Therapeutic Efficacy of Penicillin in Relapsing Fever Infections in Mice and Rats. H. Eagle, H. J. Magnuson and Arlyne D. Musselman.—p. 583.

Penicillin in Relapsing Fever in Mice and Rats.—Eagle and Magnuson studied the efficacy of penicillin in white rats and mice experimentally infected with Borrelia novyi, which causes relapsing fever in North America. The total dosages of penicillin which "cured" 50 per cent of white rats and mice infected with Borrelia novyi were 130,000 units and 100,000 units per kilogram respectively. Approximately 400,000 units per kilogram was necessary to cure more than 95 per cent of the animals. This was half the dose which killed a significant proportion of the rats. If these results can be translated to man, they imply that the curative dose of penicillin in man would be on the order of 25,000,000 units. Unless relapsing fever is more amenable to treatment in man than it is in these experimental animals, or unless other strains of the organism prove more susceptible to penicillin, the therapeutic use of the drug would not appear warranted except in arsenic resistant cases, at least until such time as it is available in larger quantities.

Puerto Rico J. Pub. Health & Trop. Med., San Juan

19:329-548 (March) 1944

Ringworm of Scalp in Puerto Rico. A. L. Carrión and M. Silva.—p. 329.
Surgical Treatment of Rectal Stage of Lymphogranuloma Venereum: Abdominoperineal Transanal Resection with Perineal Colostomy and Preservation of Anal Sphincter: Report of Cases. J. N. Benítez and L. R. Guzmán López.—p. 428.
Studies on Syphilis in Puerto Rico: III. Survey Based on Results of Flocculation Tests Among 19,395 Selectees and Volunteers During Year 1941. O. C. Mandry and J. L. Janer.—p. 483.
Available Iron in Some Tropical Foodstuffs. J. A. Goyco.—p. 502.
Mortality from Heart Disease in Puerto Rico as Shown by Vital Statistics. M. de la Pila Iglesias.—p. 508.

Review of Gastroenterology, New York

11:77-148 (March-April) 1944

*Effect of Hypertension on Prognosis of Bleeding Peptic Ulcer. H. A. Rafsky and M. Weingarten.—p. 93.
Influence of Nervous System on Gastrointestinal Tract. L. M. Davidoff.—p. 102.
Some Comments on Roentgen Diagnosis of Disease of Gastrointestinal Tract. J. S. Lehman.—p. 106.
Spontaneous Healing in Nonspecific Granuloma of the Terminal Ileum. A. O. Wilensky.—p. 108.
Indications for Vertical Gastroscopy. J. C. Pierson and G. T. Pack.—p. 111.
Infectious Mononucleosis Simulating Acute Infectious Jaundice. H. A. Monat.—p. 114.
Gallbladder Disease and Arthritis. S. Weiss.—p. 116.

Hypertension in Prognosis of Bleeding Ulcer.—Rafsky and Weingarten stress that in evaluating cases of bleeding ulcer it is necessary that the severity of bleeding and complicating diseases be considered. They report observations on 476 patients

with bleeding peptic ulcer of whom 80, or 16.8 per cent, had systolic blood pressures of hypertensive level. This is in contrast to an estimated incidence of 40 per cent of hypertensive or prehypertensive levels in the general population. Probably many more of these 476 patients were hypertensive, but no hypertension was observed during and shortly after their bleeding episodes. The authors compare the mortality and the severity of bleeding of patients with and without hypertension; also the comparative mortality below and above 50 years of age. Hypertension in a patient with bleeding peptic ulcer has little effect on the severity of the bleeding. The gross mortality in patients under 50 years of age with hypertension was increased, but this high mortality was due largely to the presence of complicating diseases not found in patients without hypertension. In patients over 50 years of age the mortality was approximately the same for those with and without hypertension, because arteriosclerosis leads to the same complications as hypertension. Indirect citrated transfusions of blood and intravenous infusions of saline solution and dextrose should be used freely to combat anemia and shock in bleeding peptic ulcer without fear of their effect on blood pressure.

Surgery, Gynecology and Obstetrics, Chicago

78:449-560 (May) 1944

Fecal Fistula. A. L. Lichtman and J. R. McDonald.—p. 449.
Effect of Certain Drugs on Motility of Jejunoileum in Normal Man. F. Huidobro, E. Montero and F. Cuevas.—p. 471.
Treatment of War Wounds at U. S. Naval Base Hospital No. 2. J. E. Porter.—p. 477.
*Wound Disruption: Study of 55 Cases at Cincinnati General Hospital. S. Tashiro.—p. 487.
Pyogenic Coxitis: II. Indications for Surgical Treatment in Residual and Chronic Stages and End-Results of Reconstruction in 53 Patients. P. H. Harmon and C. O. Adams.—p. 497.
*Hemorrhagic Shock: Relative Effect of Saline, Washed Red Cells and Heparinized Plasma in Dogs. F. W. McKee, C. F. Laycok, T. G. Martens and R. J. Nicholl.—p. 509.
*Administration of Alkalis in Sulfadiazine Therapy. J. H. Rohr and F. Christopher.—p. 515.
Clinical Syndrome Associated with Rare Anomaly of Vena Portae System. J. Fraser and A. K. Brown.—p. 520.
Healing of Abdominal Wall After Loop Colostomy: Experimental Study. A. Slive, D. Shoch and S. J. Fogelson.—p. 525.
Inert Metals in Direct Fixation of Mandibular Fractures. A. E. Strock.—p. 527.
Placement of Incisions in Neck. E. Holman.—p. 533.
Ventral Hernia Due to Normal Banding of Abdominal Muscles. L. M. Zimmerman, B. J. Anson, E. H. Morgan and C. B. McVay.—p. 535.
Correction of Abnormally Prominent Ears. F. Young.—p. 541.
Variations of Male Sacrum: Their Significance in Caudal Analgesia. G. S. Letterman and Mildred Trotter.—p. 551.

Wound Disruption.—Tashiro applies the term disruption to cases in which any portion of the peritoneal cavity or its contents presented in the wound. Synonyms for this condition are dehiscence, rupture, eventration, evisceration, avulsion and separation. A review of the operating room files of the Cincinnati General Hospital for the ten years that began with January 1933 shows that there were 55 eviscerations of laparotomy wounds during that period. There were 40 males and 15 females. Some observers believe that males are more subject to wound disruption than females. Sixty per cent of the cases observed by the author occurred during winter and spring. In northern Europe likewise there is a higher incidence of eviscerations during these seasons. Hartzell and his associates stress the role of protein and vitamin C deficiency. The work of Ingalls and his colleagues directs attention to hypoproteinemia. Some dispute the influence of subnormal plasma protein, others ascribe a major role to vitamin C deficiency and still others believe that strains and intra-abdominal pressure play a part. Lahey thinks that seratomas and hematomas are the cause of disruption. Freeman suggested incomplete closure of the peritoneum as the causal factor and others suggest allergy to catgut, decreased p_H and infection. The author comes to the conclusion that wound disruption results from a combination of factors including postoperative strains, primary or associated debilitating disease, hypoproteinemia and vitamin C deficiency. He also gained the impression that those patients who survive secondary closure are apparently predisposed to intestinal obstruction and hernia.

Saline Solution, Washed Red Cells or Heparinized Plasma in Shock.—McKee and his associates report the effect of saline solution plasma and washed red cells on dogs which were in a state of posthemorrhagic circulatory collapse, commonly referred to as shock. Whole blood or plasma has been accepted as the treatment of choice in shock. Washed red cells have been considered a rather poor blood substitute in spite of the fact that the majority of the effects of hemorrhagic shock can be explained on the basis of anoxia. The authors think that the efficacy of a blood substitute depends on its ability to maintain a satisfactory circulatory state. They produced hemorrhagic shock in dogs in the following manner: Under local anesthesia, the femoral artery and vein are cannulated. The animal is bled from the artery until the blood flow has practically ceased and is then perfused with 23 cc. per kilogram of 0.9 per cent sodium chloride solution through the vein to wash out more red cells and plasma. When the bleeding has again practically ceased, the artery is ligated and the volume of test solution equivalent to the first bleeding given immediately into the vein. Following this the vein is ligated and the wound is closed. In these experiments washed red cells suspended in isotonic solution of sodium chloride are found to be more effective than either isotonic solution alone or heparinized plasma in overcoming shock produced by a single severe hemorrhage. Replacement of the oxygen carrying capacity of the blood appears to be more important than the restoration of the normal plasma protein level under the conditions of these experiments. As an emergency measure isotonic solution of sodium chloride is shown to be effective in promoting temporary recovery from hemorrhagic shock as produced by a single massive hemorrhage.

Administration of Alkalis in Sulfadiazine Therapy.—According to Rohr and Christopher renal complications of sulfadiazine therapy can be prevented by the production and maintenance of an alkaline urine, and alkalinity of the urine can be maintained either by giving from 4 to 19.5 Gm. of sodium bicarbonate daily or, as suggested by Bywaters in 1942, by the use of one-sixth molar sodium r-lactate intravenously. Since immediately after operation patients cannot be given oral medication, the author aimed to determine a practicable method for rapidly producing alkaline urine for the safe intravenous administration of sodium sulfadiazine and for keeping the urine alkaline up to the time the sodium bicarbonate could be given orally. In 20 cases following operation the p_H of 422 specimens of urine was determined, beginning twenty-four hours prior to and continuing for five days after starting alkaline therapy. Each specimen was tested with nitrazine paper within a few minutes after being voided. Specimens were examined microscopically at least once daily for sulfadiazine crystals, red blood cells and casts. The authors found that one-sixth molar sodium r-lactate intravenously was efficient for the rapid production of urinary alkalinity in that 1,000 cc. maintained urinary alkalinity for an average of twenty-four hours. At least 24 Gm. daily of sodium bicarbonate was necessary to maintain urinary alkalinity after the intravenous administration of fluids was discontinued. Renal complications were not found after sulfadiazine administration when the urine was rendered alkaline. Sodium sulfadiazine should not be mixed with or come in contact with one-sixth molar sodium r-lactate in the intravenous set.

Tennessee State Medical Assn. Journal, Nashville

37:113-146 (April) 1944

Causes of Low Back Pain and Sciatica. R. W. Billington.—p. 113.
Use of Sulfonamides in Treatment of Subacute Bacterial Endocarditis. J. B. Riggsbee.—p. 117.
Significance of Rh Factor. J. W. Norcross.—p. 123.
Thyroiditis: Its Differentiation from Malignancy. F. H. Lahey.—p. 125.

West Virginia Medical Journal, Charleston

40:133-168 (May) 1944

Organizing County for Cancer Control. J. L. Neff.—p. 133.
Flocculation Test for Syphilis. W. L. Hardesty.—p. 138.
Appraisal of Public Relations Programs for Medical Profession in America. E. H. Skinner.—p. 141.
Why Not a Fasting Blood Sugar? H. Peterson.—p. 146.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British J. Children's Diseases, Dorking, England

41:1-30 (Jan.-March) 1944

Acute Gastroenteritis in Children: Review of 411 Cases, 1936-1943, and Plan of Investigation and Treatment. W. Gunn.—p. 1.
Diphtheria Immunization. H. W. Swann.—p. 10.

British Medical Journal, London

1:483-512 (April 8) 1944

Symptomless Incompatible Transfusion and Resultant Changes in Isoagglutinin Titer. R. Drummond.—p. 483.
Anxiety; Alopecia Areata; Neurofibromatosis: Auricular Fibrillation: Description of Patient. D. Hubble and C. H. Rogerson.—p. 486.
Milk Borne Outbreak of Gastroenteritis Due to Salmonella Dublin. P. L. Sutherland and F. M. Berger.—p. 488.
Early Treatment of Wounds of Chest in Middle East. R. B. Scott.—p. 490.
Visceral Leishmaniasis (Kala-Azar) in an Adult Contracted in Malta. F. E. Lipscomb and M. O. J. Gibson.—p. 492.
Management of Field Surgical Unit. J. Howell and B. M. Truscott.—p. 501.

Lancet, London

1:457-488 (April 8) 1944

*Toxipathic and Trophopathic Hepatitis. H. P. Himsworth and L. E. Glynn.—p. 457.
Traumatic Ischemia in Forearm and Leg. S. Stanford.—p. 462.
*Diagnosis of Adrenal Tumors Estimation of 17-Ketosteroids in Urine. Nancy H. Callow and A. C. Crooke.—p. 464.
Pressure Measurement in Small Anatomic Cavities. D. S. Evans and K. Mendelssohn.—p. 465.
Bilateral Prefrontal Leukotomy in Indian Patients. M. V. Govindaswamy and B. N. Balakrishna.—p. 466.
Acute Otogenous Labyrinthitis and Meningitis: Case. M. Ellis.—p. 468.
Meningococcal Epididymitis. S. M. Laird.—p. 469.

Toxipathic and Trophopathic Hepatitis.—Himsworth and Glynn compare necrosis of the liver in experimental animals with similar conditions in man. Experimental necrosis of the liver can be produced by certain poisons of chemical or vital origin or by lack of a nutritive factor contained in protein. The term "toxic necrosis" is generally used to describe all types of necrosis associated with exposure to poisons; it is not limited to those produced by the direct action of a poison on the liver cells. A term is required with the latter restricted meaning, and the authors propose the term "toxipathic." A term is also required to distinguish necrosis due to deficiency of a nutritive factor. For this the authors suggest the term "trophopathic." Experimental toxipathic hepatitis develops in rats rapidly after exposure to poison. The liver shows a diffuse zonal necrosis. In survivors recovery is complete. Repeated exposures to poison, however, produce a diffuse hepatic fibrosis. Experimental trophopathic hepatitis develops only after a long latent period. The liver shows massive necrosis which always leads to postnecrotic scarring and, in severe cases, to nodular hyperplasia. In man the hepatitis following exposure to such poisons as chloroform, phosphorus and carbon tetrachloride has the features characteristic of toxipathic hepatitis. The zonal hepatitis seen in eclampsia and infective hepatitis and after treatment with the organic arsenical preparations also appears to be of this type. In man massive hepatic necrosis, and its sequel nodular hyperplasia, may be attributed to a trophopathic hepatitis. There is suggestive evidence that this can arise as the result of a dietary deficiency, but most commonly it develops as a complication of a preceding illness, and it is then to be regarded as a conditioned deficiency disease distinct and separate from the illness which it complicates. Restriction of the intrahepatic circulation is an important predisposing cause of trophopathic hepatitis in man. It most commonly results from the swelling of liver cells previously injured by a toxipathic agent. Pregnancy, vomiting and anorexia contribute to the development of a trophopathic hepatitis by reducing the amount of protective nutriment available to the liver cells. An increased metabolic rate may have the same effect by increasing the general bodily requirements for protein. It is also possible that certain poisons, such as selenium and trinitrotoluene, can produce the condition by combining with components of protein so as to render them inutilizable.

Estimation of 17-Ketosteroids in Urine in Diagnosis of Adrenal Tumors.—According to Callow and Crooke a high level of excretion of 17-ketosteroids in the urine is recognized as evidence of the presence of a secreting tumor of the adrenal cortex. This level is not an infallible guide. It was misleading in 2 cases. In a woman with basophilism associated with a carcinoma of the adrenal cortex the level was deceptively low, and in a girl with virilism without an adrenal tumor it was deceptively high. The authors report 14 cases with basophilism or virilism in which excretion of 17-ketosteroids was at the expected level. Of these 3 had tumors of the adrenal cortex; in the remaining 11, adrenal tumors had been suspected but were absent. Talbot attempted to increase the specificity of 17-ketosteroid estimation for diagnosis of adrenal tumor by determining the proportion of 3-beta-hydroxy-17-ketosteroids in the total fraction. The authors found that the 3-beta-hydroxy-17-ketosteroids formed about 10 per cent of the total for normal men, women or children, while in 2 girls with adrenal tumors the proportion was 50 per cent and 63 per cent 3-beta-hydroxy-17-ketosteroids. The authors think that Talbot's modification of the assay is promising and suggest that the isolation of dehydroisoandrosterone from urine or the finding of a high ratio of beta to alpha ketosteroids in urine is of fundamental importance in the diagnosis of tumors of the adrenal cortex.

Schweizerische Medizinische Wochenschrift, Basel

73:435-472 (April 10) 1943. **Partial Index**

Less Common Internal Injuries of Knee Joint. E. Baumann.—p. 435.
Etiology of Pseudarthroses. H. Brun.—p. 437.
Surgery of Cervical Ribs. A. Brunner.—p. 439.
Left Hemicolectomy in One Stage. P. Decker.—p. 441.
*Syndrome of Symptomatic Sprue in Lymphosarcomatosis of Small Intestine and Mesenteric Lymph Nodes. R. Fritzsche.—p. 442.
Collateral Circulation After Obstruction of Abdominal Aorta. E. Hagenbach.—p. 445.
*Lack of "Hereditary Transmission" of Cancer. E. Hanhart.—p. 446.
Eosinophil Bone Granuloma. C. Henschen.—p. 451.
Hazards of Surgery of Nonincarcerated Hernia in Patients Past 60 Years of Age. F. Merke.—p. 458.
*Importance of Intrasternal Blood Transfusion. T. Naegeli.—p. 460.
Inflammation of Auditory Nerve Associated with Tuberculosis of Lungs. E. Schlittler.—p. 464.
Surgical Indications in Bilateral Nephrolithiasis and in Lithiasis of Solitary Kidneys. F. Suter.—p. 466.

Symptomatic Sprue in Lymphosarcomatosis of Small Intestine.—Fritzsche reports lymphosarcomatosis of the small intestine and of the mesenteric lymph nodes in a man aged 45. The diagnosis of endemic sprue was based on chronic fatty diarrhea, swelling of the abdomen, emaciation, mild anemia of secondary type and a roentgenologic study which demonstrated a severe jejunitis, ileitis and colitis. There were no signs of tetany, and the pigmentation was not abnormal. The very low blood pressure suggested adrenal insufficiency. There was little obstruction of the lacteals, but the disturbance in the absorption of fats could be explained by the extensive lesions of the intestinal mucosa and of the mesenteric lymph nodes. The necropsy revealed extensive lymphosarcomatosis of the small intestine, particularly of the jejunum and of the upper portion of the ileum (lymphoblastic type of lymphosarcoma). There were numerous lymphosarcomatous nodules with superficial and penetrating ulcerations. Erosion of the smaller vessels was noted in some of the nodules. There was considerable effusion of blood into the intestine. The sarcomatous process involved the retroperitoneal, pancreaticoduodenal, periaortic left ileac, inguinal, the upper cervical and the right peritracheal lymph nodes. Ascites was not excessive. There was a severe subchronic inflammation of the small intestine, particularly of the jejunum and of the upper portion of the ileum. Death occurred within five months after the occurrence of the first symptoms. The rapid course may be responsible for the absence of abnormal pigmentation and tetany. Osteoporosis was not noted on clinical examination and the necropsy. Its absence may be explained by the fact that pathogenic changes of calcium metabolism deficiency need not be present because of considerable amounts of calcium being stored in the bones. Roentgenologic examination revealed alterations in the small intestine. Microscopic postmortem studies revealed lymphosarcomatous tissue in the lymph nodes. The diagnosis of endemic sprue should be based

not alone on symptoms but also on pathologic and etiologic data. The sprue syndrome may be present in cases of malignant disease of the small intestine and lymph nodes in which the involvement is extensive; i. e., in cases in which the functional impairment of the lymph stream interferes considerably with the absorption of fats.

Hereditary Transmission of Cancer.—Hanhart reports a study of descendants of 121 married couples in which both partners had cancer. A total number of 590 children sprang from these marriages, 359 of whom lived to be over 40 years of age, 286 over 50 and 188 over 60. Only 30 of the 121 couples had children who developed cancer. The total number of the children was 43, 26 men and 17 women. Two of them developed cancer in their forties, 3 in their fifties, 11 in their sixties and 27 in their seventies. Except for a few, all died from cancer. Only one seventh of the 188 children who lived to their seventies and both of whose parents suffered from cancer developed cancer likewise, whereas six sevenths of the persons did not at the age at which the hazard of cancer is greatest in Switzerland. The average age to which both partners of the 121 parents attained was 66 years. The average age of the 30 couples whose children developed cancer was 68 years. The average age to which their children with cancer lived was 61 years. It cannot be concluded from this limited material that the descendants may develop cancer at an earlier age than their parents. A single case may occasionally be significant in some other direction. Two children, a son of 65 and a daughter of 60 years, were in good health although their father had primary multiple malignant epitheliomas and their mother died from cancer of the uterus. The series of 121 married couples with cancer represented the incidence in the canton of Glarus. The average cancer expectancy of their 286 children when past 50 years of age amounted to around 13 per cent, whereas cancer expectancy of the population of the city of Zurich (about 320,000 people) was about 20 per cent. Both partners of the 33 out of the 121 married couples developed cancer of the stomach, and only 11 per cent of their children did likewise. Thus Julius Bauer's concept of a special predisposition of certain organs to cancer was not demonstrated. The results of this study are much like those of investigations on twins. They suggest absence of a specific hereditary predisposition to cancer.

Intrasternal Blood Transfusion.—Naegeli emphasizes advantages of intrasternal transfusions in the treatment of patients in whom no suitable veins for injections are available. The method is indicated in dehydration of various types as in many intestinal diseases whose incidence is high in wartime. Intrasternal infusion of human serum is the method of choice in severe burns with extensive skin lesions. Continuous intrasternal transfusion is preferable to intravenous drip in treating restless patients and patients with peritonitis. A patient with the needle in position may safely assume a lateral position and may eat. The method is contraindicated in any disease of the sternum and in aortic aneurysm. Introduction of a small amount of sterile fluid into the mediastinum by piercing the inner plate with the needle is not harmful. Amounts up to 1,000 cc. of human serum, or of sodium chloride solution (tutofusin), were given in one to one and a half hours with a 20 cc. syringe and in five to eight hours by a drip irrigator. The needle should be inserted in the middle of the sternum at the level of the second or third interspace. A mild pain felt by the patient when blood is aspirated offers a fair indication that the point of the needle has entered the bone marrow.

Medicina, Madrid

12:69-142 (Feb.) 1944. **Partial Index**

Clinical Indications of Sternal Puncture: Report of Acute Aleukemic Leukemia. M. F. Fernández and F. C. Otermín.—p. 69.
*Importance of Early Diagnosis of Leprosy. F. Contreras and J. Guillén. —p. 89.

Early Diagnosis of Leprosy.—Contreras and Guillén emphasize the importance of early diagnosis of leprosy because it is curable in the early stage. Leprosy is acquired only by direct or indirect contact. Children and young adults, especially those poorly nourished and living in unhygienic surroundings and having frequent contacts with leprous patients, are the most frequent victims of the contagion. Enlargement of the inguinal lymph nodes, induration of the cubital nerves, infiltration and slow depilation of the ends of the eyebrows, erythematous spots, symmetrical zones of anesthesia in certain areas on the limbs, hyperesthesia of the bones, chronic rhinitis and depilation of the armpits are the early signs of leprosy. The intracutaneous histamine test on a suspected leprous spot gives a positive result, which consists of lack of peripheral erythema about the punctured spot, slow formation of a wheal, absence of local itching and rapid disappearance of the papule. Lepra bacilli are found in the nasal mucus with or without reactivation of the disease with potassium iodide (3 Gm. daily up to production of nasal catarrh) in the blood and in the secretions such as urine, semen and milk and from the cutaneous lesions. In pure nervous leprosy the bacillus can be found by a biopsy of an enlarged subcutaneous nerve.

Medizinische Klinik, Berlin

38:817-840 (Aug. 28) 1942. **Partial Index**

Methods of Resuscitation. R. H. Laun.—p. 817.
Digestibility of Dehydrated Vegetables. W. Heupke, H. Raschig, K. Andrae and W. Neumann.—p. 822.
Anesthetics in the Field. F. Nestmann.—p. 824.
Value of Electrocardiographic Investigations in Infectious Diseases. P. Laurentius.—p. 826.
*Diagnosis of Carbon Disulfide Poisoning. Rodenacker.—p. 828.

Diagnosis of Carbon Disulfide Poisoning.—Rodenacker states that the industrial use of carbon disulfide has greatly increased in connection with the artificial silk and related industries but that carbon disulfide poisoning is relatively rare. It occurs chiefly in connection with breakdown of equipment and with new installations. If the carbon disulfide content of inspired air exceeds 0.15 to 0.2 mg. per liter of air, acute and more or less delirious mental disturbances may result. Some men who have been exposed to carbon disulfide may go to a physician and tell of their fear of mental derangement, others may attack their co-workers, still others may take to nocturnal prowling or to irresponsible ranting and destruction. The author thinks that the derangement of the brain function is the result of the impairment of the organic lipoids in the tissues about the infundibulum by the fat dissolving carbon disulfide. This impairment subsides rapidly, for after three weeks the mental equilibrium is usually restored. The carbon disulfide delirium is accompanied by considerable loss in weight, probably as a result of damage to the metabolic centers in the midbrain, but this loss is also rapidly compensated during convalescence. Impairment of libido and of sexual potency also results from carbon disulfide poisoning. The diagnosis can be further corroborated by determining the carbon disulfide content of the air in the work shop. If it exceeds 0.2 mg. per liter, the xanthogenate determination of the blood and fluctuations in the weight will help to decide the diagnosis. The author also directs attention to the carbon disulfide neuritides. The nerves of the lower extremities, particularly the peroneal nerve, may become paralyzed, but these lesions likewise have a favorable prognosis. Carbon disulfide may also cause neuritis of the optic nerve with amblyopia. This form of amblyopia has a better prognosis than amblyopia caused by lead, arsenic or tobacco. Carbon disulfide may also cause colics, which are brought on by pylorospasm.

Münchener medizinische Wochenschrift, München

89:749-770 (Aug. 28) 1942. **Partial Index**

Results of Recent Investigations of Allergic Conditions. F. E. Haag. —p. 752.
Clinical Aspects of Trichinosis. C. Mumme and A. Sundermann. —p. 758.
Encephalitis Association with Trichinosis. Elisabeth Pohlmann.—p. 760.
*Complement Fixation Reaction with New Pig Antigen in Trichinosis. A. Gaase.—p. 761.

Complement Fixation Reaction with New Pig Antigen in Trichinosis.—Gaase reports results of complement fixation reaction with an antigen from the muscles of trichinous pigs. The serums of 5 patients with the clinical diagnosis of trichinosis gave slightly positive or even negative results with rat antigen, but 100 per cent positive results were obtained with pig antigen. The pig antigen proved superior to the rat antigen. It is suggested that the pig antigen is closer than the rat antigen to the parasite causing trichinosis in man.

Book Notices

Inadequate Diets and Nutritional Deficiencies in the United States: Their Prevalence and Significance. Report of the Committee on Diagnosis and Pathology of Nutritional Deficiencies, Food and Nutrition Board. H. D. Kruse, Chairman. Bulletin of the National Research Council, Number 109, November 1943. Paper. Pp. 56. Washington, D. C.: The National Research Council, National Academy of Sciences, [n. d.].

This booklet represents an exhaustive piece of work by the Committee on Diagnosis and Pathology of the Food and Nutrition Board. There is brought together in this report all the available literature as well as much unpublished material concerning appraisal of the nutritional status of the population of this country. A much better perspective of this problem can be obtained from a survey of the reports so assembled. From the recorded data it can be seen that by whatever standard nutrition is judged there is widespread consumption of diets below the recommended levels. Numerous figures in tables and text of the report substantiate this fact. Studies made in the thirties as well as those in the past three years indicate that in the lower income groups only 20 to 30 per cent were receiving adequate diets. In the later studies the percentages of individuals in various levels of society who did not receive the recommended amounts of the various essential nutrients was surprisingly high. As a rule the inadequacies were found in the fruits and vegetables more frequently than in protein foods.

The result of these poor diets is found in the incidence of deficiency states. In the past recognition has been limited to the acute types of deficiencies, which are in the minority. With the means at hand today to recognize chronic, gradually developing states by refined chemical and clinical examinations, the prevalence of such conditions is found greater than has ever been suspected. The importance of these latent, chronic deficiencies to the health of a nation is shown by numerous quoted studies in which low levels of nutrition were found to have an undesirable effect on body states and functions.

This report serves the useful purpose of demonstrating the extent of nutritional deficiencies by sheer weight of evidence. It should serve to correct the opinion sometimes expressed that the extent of nutritional deficiencies is exaggerated. In the conclusion attention is drawn to the fact that our goal should not be just passable health but buoyant health. This objective can be more readily obtained by the practical application of the knowledge of nutrition which is being developed so rapidly rather than by indifference to these facts. Certain steps which might be taken to insure a better understanding of deficiency states are outlined.

A Provisional Classification of Diseases and Injuries for Use in Compiling Morbidity Statistics by The Committee on Hospital Morbidity Statistics. Medical Research Council Special Report Series No. 248. Boards. Price, 3s. Pp. 168. London: His Majesty's Stationery Office, 1944.

This special report accentuates what appears to be a fundamental conflict of purpose in the classification of diseases and injuries. The main interest of biometricians in classification lies in statistical summarizations based on diagnoses made either during life or after death from a wide variety of sources. For them disease or death lists are desirable which will allow ready grouping and from which conclusions of material statistical significance can be drawn regarding the incidence of disease, the causes of death and other information based on mass compilations. The clinician, on the other hand, wishes a classification of disease which will allow accuracy, completeness, and reasonable uniformity; it should be acknowledged that the individual clinician's diagnosis provides the source from which the biometrician works.

The Provisional Classification of Diseases and Injuries under discussion does not appear to recognize these issues clearly. It has drawn extensively from the International List of Causes of Death, from the Diagnosis Code of the United States Public Health Service and from English sources, on the one hand, and from the clinical classification of the Standard Nomenclature of Disease and the Standard Nomenclature of Operations, on the other. The resultant classification with code numbers lends itself better to the statistical purpose than it does to the clinical. Neoplasms, for example, are classified as to whether they are malignant or nonmalignant and as to general location; but it is impossible to specify the more detailed location or nature of the tumor in most instances. As a clinician's classification, therefore, this is unsatisfactory. Indeed, that fact is pointed out in the preface in a somewhat equivocal manner: "It is not suggested that it [the provisional classification] should replace the Standard Nomenclature of Disease of the American Medical Association in those hospitals in which the latter has been adopted, and which have a record system justifying the use of that more detailed nomenclature." In spite of this statement it may be feared that the greater simplicity of this list will appeal to some physicians and will cause them to feel that more refined diagnoses are not necessary.

There are several features of disease classification which may be emphasized: 1. It is not feasible to employ exactly the same type of classification of causes of death as it is for diseases; e. g., many diseases of the skin never cause death. 2. There is a difference in purpose between classifications of disease as desired by the biometrician and by the clinician. 3. The principal problem of the classification of diseases and causes of death is how the needs of both groups can be satisfied. 4. The importance of this entire problem would justify an international conference when one becomes possible. Conferences of this type have been held periodically to revise the International List of Causes of Death. It may be advisable and feasible to enlarge the next such conference to include discussions of the wider subject.

An Atlas of Anatomy. By J. C. Boileau Grant, M.C., M.B., Ch.B., Professor of Anatomy in the University of Toronto. In Two Volumes. Volume II: Vertebrae and Vertebral Column, Thorax, Head and Neck. Cloth. Price, $5. Pp. 205-390, with 233 illustrations. Baltimore: William Wood & Company, 1943.

Professor Grant deserves thanks and congratulations for the production of an excellent atlas which undoubtedly will be of great service to medical students and clinicians. The second volume follows the general plan of the first, illustrating the vertebral column, the thorax, the neck and the head. The section on the vertebral column is relatively large and well done, and so the atlas will be welcomed by orthopedists and clinicians though less attention is given to muscles than in most works of this kind. This volume contains 233 drawings, of which 38 are diagrams, thus bringing the total for the two volumes up to 460. This number is about half that for Spalteholz's atlas and one third that for Toldt's atlas. But since the drawings are regional instead of systematic, more is represented in fewer plates. The regional plan accords well with the accelerated program now followed in the medical schools, under which there is not time for the old leisurely but effective method of repeated dissections.

The halftone illustrations are excellent. They are drawn by Mrs. Chubb, a former pupil of Max Broedel, on the basis of photographs of special dissections, and so may be relied on for accuracy. Under each drawing appears a list of points to be especially observed. These "observations" add much to the value of the plates. Slight variations from the normal and minor defects, such as are found in nearly every cadaver, are faithfully represented and the "observations" draw attention to them.

Each volume has its own index for convenient reference.

The atlas can be recommended to both medical students and practitioners.

Safe Convoy: The Expectant Mother's Handbook. By William J. Carrington, A.B., M.D., F.A.C.S., Attending Gynecologist, Atlantic City Hospital, Atlantic City. Cloth. Price, $2.50. Pp. 256. Philadelphia & New York: J. B. Lippincott Company, 1944.

The author has written a long book for the expectant mother, and the book does not appear well balanced. There is too much scientific material which the lay person cannot appreciate, such as discussion of calories, grams, milligrams and micrograms. The electrocardiogram, fluoroscope, x-rays, percentage of hemoglobin, renal function tests and many other laboratory procedures are discussed in a manner likely to bewilder the lay person. The author discusses the Caldwell and Molloy classification of pelves, mechanism of labor, ovulation and fertilization. Two pages are devoted to a discussion of insulin. He states that in World War I a lack of vitamins led to the final surrender of the Germans; that vitamin E tends to prevent mis-

carriage. Positive proof has not to date been advanced supporting the relationship between abortion in the human being and lack of vitamin E. Formulas for feeding the baby and various diseases of the baby over the first year or more of life are described. Certain misstatements also are made, for example, the author states that in the bitterling test for pregnancy the fish menstruates; that Jane Seymour, third wife of Henry VIII, was delivered by cesarean section and survived. There is no proof that she had such an operation, and she died in the puerperium. Much of the scientific data could have been omitted and in future editions the author should check some of the questionable statements of fact.

Pharmacology. By Michael G. Mulinos, M.D., A.B., A.M., Associate Professor of Pharmacology, College of Physicians and Surgeons, Columbia University, New York. With a foreword by Charles C. Lieb, A.B., M.D., Hosack Professor of Pharmacology, College of Physicians and Surgeons, Columbia University. Oxford Medical Outline Series. Cloth. Price, $4. Pp. 482. New York, London & Toronto: Oxford University Press, 1944.

This is not a textbook of pharmacology in the ordinary sense, since the author has followed rigidly the apparent intention of the publishers to have an outline of pharmacology. The volume is one of the Medical Outline Series. In presenting subject matter in this form the author gives his material in a manner which many times is not completely satisfactory, since an outline does not provide any opportunity for discussion of controversial subjects. There is considerable strain at times in applying the outline method, and frequently statements are made which are quite dogmatic and even trite, as for example on page 346:

D. *Pharmacology of the Heart.*

1. The heart acts as a pump.
   a. It propels the blood from the venous into the arterial side.
   b. It maintains a "normal" or adequate blood pressure.

In spite of the restrictions offered by the method of presentation, the author has been able to present pharmacology from the modern therapeutic approach, even to including forms of therapy other than the use of drugs. This point of view would make the book much more acceptable to the practicing physician than the old type of pharmacology textbooks. The author should be commended for completely casting aside the old apothecary system and using only the metric system throughout the book. Revision of the manuscript has apparently taken place up to the time of going to the press, because information on new drugs is available in this book.

Obstetric Cases. By D. MacMillan, Obstetrical and Gynaecological Surgeon, Christchurch Hospital, New Zealand. First Series. Cloth. Pp. 142. Christchurch, New Zealand: N. M. Peryer Limited, 1943.

This book is a compilation of thirty-one obstetric cases, most of which illustrate the mechanism of labor, the dystocia which resulted from abnormalities of this mechanism, and the manner in which the author treated these patients, but a wide variety of obstetric complications are reported. Among them are abdominal pregnancy, abruptio placentae, contracted pelvis, contraction ring, prolapse of the cord, eclampsia, failed forceps and placenta previa. In many instances the author recounts analogous cases reported by Robert Lee more than a hundred years ago. The first part of the book deals with training in obstetrics, rules in practice, causes of maternal and fetal mortality, signs of fetal distress and antepartum examinations. The conservative suggestions and pithy remarks of the author make the volume interesting and instructive.

Psychosomatic Diagnosis. By Flanders Dunbar, M.D., Med.Sc.D., Ph.D. With foreword by Leonard G. Rowntree, Colonel, Medical Reserve Corps, United States Army. Cloth. Price, $7.50. Pp. 741. New York & London: Paul B. Hoeber, Inc., 1943.

The author is one of the leaders of investigation and progress in the field of psychosomatic medicine, having begun her work in this field at Columbia University some twelve years ago. Essentially psychosomatic medicine involves the codification of certain technics of medical practice that have prevailed since the beginning of time and the inclusion within this practice of some of the dynamic aspects of freudian technic. The work provides information on the taking of the history of a case, with special reference to factors in the field of psychosomatic medicine. The provision of actual examples of the use of the technic in investigating cases makes the book especially useful. Special chapters are devoted to fractures, cardiovascular disease, coronary occlusion and rheumatic conditions. There are also several chapters concerned with contrasting profiles, personality profiles and conditions in which overlapping occurs. A useful bibliography and index complete the volume.

On the Influence of Trades, Professions, and Occupations in the United States, in the Production of Disease, 1837. By Benjamin W. McCready, M.D. With an introductory essay by Genevieve Miller, M.A. Boards. Price, $1.75. Pp. 129, with portrait. Baltimore: Johns Hopkins Press, 1943.

In 1835 the Medical Society of the State of New York proposed as a subject for one of its annual prize essays "the influence of trades, professions and occupations in the United States in the production of disease." Benjamin W. McCready, M.D., of New York was declared the winner. His sixty page essay was published in the Transactions of the Medical Society of New York. Recently it was reprinted in book form. There had not been much consideration given to this subject in the United States up to this time, owing largely to the fact that industries were small and rather indefinite in nature. While McCready did give consideration to specific hazards and diseases of thirty-one employments, he dwelt largely on the sociological aspects, as improper housing, intemperance in laborers and exploitation of workers. The essay gives a remarkable insight into the conditions of labor and living in that period, many of which have been improved now by legislation and general elevation of standards of living. It was undoubtedly a realistic approach to the problem of occupational disease and presents a sharp contrast to present methods in this field, which has become greatly enlarged and defined.

Physical Foundations of Radiology. By Otto Glasser, Ph.D., Professor of Biophysics and Head of Department of Biophysics, Cleveland Clinic Foundation, Cleveland, Ohio, Edith H. Quimby, Sc.D., Associate Professor of Radiology (Physics), College of Physicians and Surgeons, Columbia University, New York, Lauriston S. Taylor, Ph.D., Chief of X-Ray Section, National Bureau of Standards, Washington, D. C., and J. L. Weatherwax, M.A., Philadelphia General Hospital and Graduate School of Medicine, University of Pennsylvania, Philadelphia. Fabrikoid. Price, $5. Pp. 426, with 95 illustrations. New York & London: Paul B. Hoeber, Inc., 1944.

A knowledge of radiologic physics is a necessity for every physician who intends to use x-rays and radium as a therapeutic means. Such knowledge is of great aid in acquiring a familiarity with the technical use of the x-rays for diagnostic purposes. The authors of this book are leaders in their specialties and considered as constituting a court of appeals in questions relating to the physical aspects of roentgen diagnosis and roentgen and radium therapeutics. The chapters are well balanced. The information is offered in attractive form which should be understandable without difficulty by every physician. This book can be recommended highly to every one who practices or prescribes radiology.

Eat to Live: The Blue Book of Cooking. By Eula Bee Corban, Esther Robertson Hallock, and Mabel Martin. Cloth. Price, $1.75. Pp. 140, with illustrations. New York: M. S. Mill Co., Inc., 1943.

This book of recipes is planned primarily for a period when many of the substances usually available in the diet are lacking, so that ingenuity and knowledge are necessary in planning diets. About 150 recipes are included in the book. Its most useful special feature, however, is the diagrammatic exemplification of the amount of essential ingredients contained in one portion of the dishes when eaten. This graphic formula shows, for example, that fluffy frosting on an 8 inch square cake provides a very small modicum of calories and nothing else.

Sexual Anomalies and Perversions: Physical and Psychological Development and Treatment. A Summary of the Works of the Late Professor Dr. Magnus Hirschfeld, President of the World League for Sexual Reform. Compiled as a Humble Memorial by His Pupils. A Textbook for Students, Psychologists, Criminologists, Probation Officers, Judges, and Educationists. [Authorized Translation.] Cloth. Price, $4.95. Pp. 650. New York: Emerson Books, Inc.; London: Francis Aldor Publisher, 1944.

This is a reprint of the work published in England. Magnus Hirschfeld died some years ago. He made many contributions to the literature of sexology. The present work is a bare outline and hardly to be considered at this time either a learned or a modern contribution to the field concerned.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

BRONCHIAL ASTHMA AND BRONCHIECTASIS

To the Editor:—**What is the proper treatment of an asthmatic patient who has a complicating bronchiectasis? The patient, a married woman aged 28, has had asthma for years. It is at present in a severe form almost all the time. She was sent to me for x-ray treatment for the asthma because of recent favorable reports. I gave her a total of 1,000 roentgens, using high voltage therapy in divided doses. There seemed to be slight improvement. Examination with iodized oil revealed a bilateral cylindric bronchiectasis; this included both bases. X-ray examinations of the sinuses are negative. The only other positive finding is a palpable thyroid. She has no symptoms of hyperthyroidism. I have not had a basal metabolic test made as yet. What do you think is the proper disposition of this patient? Do you think the bronchiectasis is causing the asthma or vice versa?**

R. Nelson Long, M.D., Selma, Ala.

ANSWER.—Adequate treatment of a patient who has both bronchial asthma and bronchiectasis is usually impossible, although much can be done to lessen the symptoms. It is known that bronchiectasis does not cause bronchial asthma. It is believed, although this has not been proved, that bronchial asthma may in some cases lead to bronchiectasis. The two conditions coexist rather frequently, but most patients with asthma do not develop bronchiectasis and the latter can occur without asthma. Bullen, Chobot, Selby, Raia and Viswanathan have emphasized the frequency of the association of the two illnesses and have pointed out that bronchial infection and obstruction are important etiologic factors. Watson and Kibler in Arizona found that in 90 per cent of their patients with bronchiectasis allergy was also present as shown by the history, positive skin tests, associated allergic conditions and the presence of at least 10 per cent eosinophils in the nasal or bronchial secretions. Because asthmatic patients frequently move to Arizona, their figures, while accurate for their patients, are probably much higher than occur in the practice of physicians in other localities.

Treatment, in order of preference, includes (1) antiallergic measures, (2) general hygienic treatment, (3) postural drainage, (4) bronchoscopic aspirations and (5) lobectomy. Antiallergic measures should be carried out as thoroughly as possible. A complete allergic survey should be made, including scratch and intradermal skin tests; all suspected allergens should be removed, and if they cannot be avoided, e. g. house dust, injections of extracts of these substances should be given with a view to raising the patient's resistance (hyposensitization). General hygienic measures include adequate diet and rest, administration of vitamins and removal of definite foci of infection. Respiratory vaccines and avoidance of cold, damp climates may be of some service. Postural drainage should be used in all cases and over a long period of time. Bronchoscopic aspirations assist in the removal of sticky sputum and thereby help both the asthma and the bronchiectasis, but relief is only temporary.

In recent years lobectomy or even pneumonectomy has given excellent results in selected cases, according to Cole and Nalls, Head and others. Given a fairly good risk, a good chest surgeon and a unilateral bronchiectasis, surgery seems definitely indicated; all other measures can give only temporary and partial relief. Unfortunately, in this case, lobectomy is more hazardous because the condition is bilateral.

Instillations of iodized oil are essential for the diagnosis of bronchiectasis. Therapeutically, however, the procedure has been widely criticized. Results have not been too good even in the hands of the most enthusiastic workers. Opponents of the procedure have shown that untoward reactions are not infrequent: allergic reactions to iodine or poppyseed, circulatory failure, spread of infection, damage to lung tissue, spontaneous pneumothorax, massive collapse and even fatality. Most men who have tried the procedure have abandoned its use.

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Viswanathan, R.: Incidence of Bronchiectasis in Asthma, *Indian M. Gaz.* **73**: 138 (March) 1938.

Watson, S. H., and Kibler, C. S.: Bronchiectasis, THE JOURNAL, July 30, 1938, p. 394; The Role of Allergy in Bronchiectasis, *J. Allergy* **10**: 364 (May) 1939.

Cole, D. B., and Nalls, W. W.: The Treatment of Bronchiestasis, *Dis. of Chest* **5**: 16 (March) 1939.

Head, Jerome: Personal communication.

TESTESTERONE PROPIONATE FOR ELDERLY MAN

To the Editor:—**I have been giving testosterone propionate to a patient over 60 years old for the last year, 10 mg. intramuscularly twice weekly, mostly for the purpose of stimulation and sedation. What I should like to know is this: Is there any danger in continuing to give it to him in this amount? It is believed that the prolonged administration of gonadotropic hormones may predispose to cancer formation, but if I am correct this applies only if they are used locally but not by injection. I would appreciate it if you would verify whether I am correct or not, as these injections are rather beneficial to the patient.**

George Kalichman, M.D., Santa Monica, Calif.

ANSWER.—There may be confusion introduced by speaking of "stimulation and sedation." Testosterone propionate in adequate dose is a stimulant to the seminal vesicles, prostate and penis and to libido and potentia. Doses of 10 mg. intramuscularly twice weekly would cause such slight stimulation that an adult male would hardly be aware of it subjectively. In cases of climacteric syndrome testosterone propionate serves to reestablish autonomic nervous stability and in that sense is a sedative. The latter use is far more important in patients of the age referred to by the questioner. Such treatment may be continued for periods of months or several years if necessary to continue the relief from climacteric symptoms. It is not apt to be helpful if employed merely for the stimulation of libido and potentia, nor is such therapy considered wise by conservative physicians.

A further confusion is introduced by the questioner in referring to gonadotropic hormones, since testosterone is not gonadotropic. The term should be used to refer only to the pituitary or similar materials which stimulate the testes. Testosterone is a product of the testes. Gonadotropic hormones are not known to predispose to cancer formation. Whether testosterone does so predispose is debatable, but, since testosterone is a physiologic stimulant for the development of the prostate, ordinary clinical caution would dictate that it should be used only when there is clinical certainty that malignant disease is not present in the prostate. Furthermore, repeated prostatic examinations should be conducted throughout the course of therapy to be certain that no tumor appears. It is probable that the relationship between testosterone and tumor development in the genital tissues is not dependent on local application but is due to the physiologic effect which is obtained whether the material is taken by parenteral injection, local application or orally in the form of methyltestosterone.

SODIUM THIOSULFATE AND HYDROCHLORIC ACID SOLUTIONS FOR SCABIES

To the Editor:—**Solutions containing sodium thiosulfate 20 per cent, mixed with hydrochloric acid 5 per cent, are applied to the skin at different intervals in the treatment of scabies. I understand this was used in World War I. Is this treatment feasible?**

W. A. Newton, M.D., Beaumont, Texas.

ANSWER.—The treatment of scabies with a solution of sodium thiosulfate followed by weak hydrochloric acid solution is well established. According to Reuben Friedman (Scabies—Civil and Military, New York, Froben Press, 1941, p. 235) Crocker, in the 1905 edition of his textbook, reported the use of a solution of sodium hyposulfite 12 Gm., cologne water 32 cc. and rose water to make 256 cc. followed by a solution of tartaric acid 6 Gm. in 256 cc. of distilled water. Posen in 1929 used 40 per cent sodium thiosulfate (number 1) followed by 2.5 per cent hydrochloric acid (number 2). Number 1 was sponged on at night, number 2 the next morning. No complications were seen even in children. The itching ceased in three days, and the treatment ended after the sixth day.

Ravaut and Mahieu in 1934 reported the results of the use of the same strength of the thiosulfate but followed it with a somewhat stronger solution of the acid, 4 per cent, which was applied fifteen minutes after the first. The treatment was preceded by a soap and water bath, the skin was dried and the solutions were rubbed in over all the skin except the face and head. An hour later the same procedure was repeated. After the skin had dried, the patient dressed. On the second day the same four applications were made. On the third day a soap and water bath and fresh clothes were prescribed. Two days' treatment was usually enough, but a longer course can be used if necessary. They had perfect results with 52 patients, 11 of

them children, and with 15 patients who had been previously treated without success.

In 1936 Kulchar and Meininger (Sodium Thiosulfate in the Treatment of Scabies, *Arch. Dermat. & Syph.* **34**:218 [Aug.] 1936) published a report on this method of treatment of 50 patients ranging in age from 7 months to 62 years. One week after the treatment was ended all were free from scabies; but 1 patient had a relapse or reinfection five weeks later, though free from symptoms for four weeks. Six patients repeated the treatment too often, but only 1 of them had a mild dermatitis, after the eighth application. This method gave better results than they obtained in a control series of 50 cases treated with the Danish ointment.

W. S. Parker ("Hypo-HCl" Treatment of Scabies, *Lancet* **1**:987 [April 29] 1939) praises the method and says that it deserves wider use. Friedman used it with success.

Only A. E. Ingels (Scabies: Its Treatment with Benzoyl Benzoate as Compared with Sodium Thiosulfate plus Hydrochloric Acid, *California & West. Med.* **50**:265 [April] 1939) has any criticism of the method. He used only one treatment a day, 40 per cent sodium thiosulfate rubbed in and allowed to dry, then 4 per cent hydrochloric acid rubbed in and allowed to dry. The next day this was repeated. The third day a bath was followed by clean clothes. The patients were warned not to repeat the treatment without permission of the doctor. Of 30 patients 4 were not cured and 5 showed mild dermatitis venenata. Many "complained of aggravated or distressing itchy sensations, which betrayed the peculiar tenacity characteristic of a sulfur dermatitis." Repetition of the course aggravated these symptoms, and 2 patients had severe dermatitis. He did not use the method in cases complicated by secondary infections or other skin manifestations. These caused more trouble than just described. He used benzoyl benzoate in a comparable series of cases and had less trouble and more constant cures from it.

Whatever the method, the success or lack of it depends largely on the intelligence of the patient and the care of the physician in describing the minutiae of the treatment. Carelessness in the clean-up at the end of the course is the chief cause of reinfection. Overuse of the remedy because of itching at the end of the ordinary course is the chief cause of dermatitis. The patient ascribes the itching to the activity of the mite instead of to the irritation of the remedy and adds to it by application of more of the remedy.

RENAL COMPLICATIONS OF NEWER SULFONAMIDES

To the Editor:—**Is sulfadiazine more apt to produce kidney complications than sulfathiazole and, if so, how and why? Has any evidence accumulated in the literature that sulfamerazine is more dangerous in the same respect than sulfadiazine or sulfathiazole? Isn't it pretty generally recognized that the urine should always be alkalized when any of these three drugs is being administered in therapeutic doses?**

Preston S. Herring, M.D., Vicksburg, Miss.

ANSWER.—Precise statistical data comparing the incidence of renal complications in a large series of patients treated with sulfadiazine and sulfathiazole are not available. Yet in one large institution therapy with sulfathiazole was associated with kidney complications more frequently than with sulfadiazine. Likewise the incidence of renal dysfunction was greater with sulfathiazole than with sulfamerazine. Sulfamerazine did not appear to cause any more renal disturbances than sulfadiazine. There are at least three mechanisms whereby the kidneys are affected by the foregoing compounds. First, the drugs or their conjugated products may precipitate out of the urine, particularly in the tubules, and result in a suppression of the free flow of urine. This produces an oliguria and a retention of metabolites usually excreted by the kidney. Second, the compounds may exert a direct toxic effect on the renal parenchyma, provoking areas of focal necrosis with a secondary cellular reaction. Third, there is increasing evidence that the kidney may be the site of a hypersensitive type of reaction to the compounds or, as Rich terms it, an anaphylactic type of hypersensitivity. This type of vascular lesion does occur in other tissues of the body and is more readily produced by sulfathiazole than by sulfadiazine or sulfamerazine. It may be that this third mechanism accounts for the more frequent occurrence of renal lesions following therapy with sulfathiazole.

It is now generally recognized that attempts should be made to have patients excrete an alkaline urine when any one of the three drugs is utilized in therapeutic doses. It should be emphasized that the urine should be alkaline throughout the twenty-four hour period, which may require divided doses of a large amount of alkali such as sodium bicarbonate. In addition to alkalization of the urine the fluid intake should be of that magnitude which will insure in an adult the output of a liter or more of urine in twenty-four hours.

HAY FEVER FROM TREE POLLENS

To the Editor:—**Can you tell me of any desert or mountain resorts that are free of oak, hackberry, elm, box elder, mimosa, acacia and ash trees? My wife has hay fever badly from pollen of these trees during April and May and since desensitization treatments have not helped her much so far I should like to send her away.**

M.D., Virginia.

ANSWER.—While the overlapping natural ranges of the eight trees mentioned with their numerous related genera and species cover all of the United States and Canada, it is possible that there are a number of places where the victim could be comfortable during April and May. The greatest difficulty with the desert resorts is the possible presence of elms and box elders, particularly the latter, which are widely used for shade in dry areas. The difficulty in the mountain resorts is the possible presence of ash and oak. Much of the Southwest, from west Texas to southern California, must be avoided because of acacia, mimosa or the closely related mesquite. There are all too few year round pollen records in the mountain and desert areas. Miami, Fla., might be satisfactory as far as air borne pollens of the types mentioned are concerned. While hackberry and oak are listed for the district, the oaks finish their pollination before April, and hackberry pollen was not encountered during the year tests were made. Key West would be even better than Miami. The only possible difficulty in southern Florida would be the presence of royal poinciana, which is rather closely related to mimosa and acacia. However, this type of pollen is not wind borne and was not detected in the air in the pollen studies made at Miami.

Reference:

Nichol, E. S., and Durham, O. C.: A Pollen Survey of Miami, Florida, *South. M. J.* **24**: 947 (Nov.) 1931.

COUNTING, STAINING AND PRESERVATION OF SPERMATOZOA

To the Editor:—**I should like to know the method used to count the number of spermatozoa per cubic centimeter of semen. Can the spermatozoa be stained? How are they preserved? What is the best temperature to use in order to keep them alive over the necessary period of time?**

Joseph T. Nardo, M.D., Somerville, Tenn.

ANSWER.—The technic used is the same as for making a leukocyte count. After the seminal fluid has liquefied, which usually occurs within ten minutes, it is measured in cubic centimeters. A sample is drawn up to the 0.5 mark in the white pipet. A solution containing 1 per cent solution of formaldehyde U. S. P. diluted 1:10 and 5 per cent sodium bicarbonate in distilled water is then drawn up to the 11 mark. The dilution is 1:20. A drop of the diluted seminal fluid is allowed to flow under the cover glass of the counting chamber. After allowing a few minutes for settling, one counts all the spermatozoa in the four large squares (each one 1 mm. square and 1 mm. deep), using the high dry objective. The total number of spermatozoa counted is then multiplied by 20 (for dilution), divided by 4, multiplied by 10 (for cubic millimeters, since the depth of the cells is 0.1 mm.) and by 1,000 for cubic centimeters. The result obtained is the number of spermatozoa in 1 cc To obtain the total number of spermatozoa ejaculated, the number in 1 cc. of seminal fluid is multiplied by the volume of seminal fluid.

Many different methods have been developed to stain spermatozoa. Two methods can be found in the following references:

Greenberg, B. E.; Berman, S.; Gargill, S. L., and Griffin, R. C.: A New Method for Staining Spermatozoa, *J. Clin. Endocrinol.* **3**: 179 (March) 1943.

Cuyler, W. K., and Baptist, Margaret: A Spermatozoal Stain for Clinical Studies, *ibid.* **2**: 571 (Sept.) 1942.

The semen is best preserved in a refrigerator under ordinary ice box temperature. The addition of a small crystal of thymol will keep it in a suitable condition for a week or so.

SULFONAMIDES IN PRODROMAL STAGE OF MEASLES

To the Editor:—**Is it advisable to use sulfonamides in the catarrhal stage of measles before the appearance of Koplik spots or the rash? Will the administration of sulfonamides given in such a case delay the appearance of the rash?**

M.D., New York.

ANSWER.—There is no objection to using sulfonamides in the catarrhal stage of measles before the appearance of the rash. Some physicians believe that complications are diminished by such a procedure. In one large experience a delay in the development of the rash because of the treatment described has not been observed.